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Frequency of Communication on Facebook as a Factor in Four Dimensions of Perceived Social Support

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FREQUENCY OF COMMUNICATION ON FACEBOOK AS A FACTOR IN FOUR DIMENSIONS OF PERCEIVED SOCIAL SUPPORT

A Dissertation

Presented to

the Faculty of the Graduate School of Social Work

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Granger E. Petersen

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Advisor: Julie Anne Laser, Ph.D.
Abstract

This dissertation explored relationships between the frequency of public communication on the social networking website Facebook and the level of social support an individual perceives. Students in the Graduate School of Social Work and the Emergent Digital Practices program were surveyed. Correlation and regression analyses were used to examine the relationship between the variables. Findings from the analysis indicated that the frequency of posting statuses on Facebook and the frequency of responding to other’s status updates on Facebook was significantly and negatively associated with a perception of tangible social support. The frequency of these types of communication were not significantly associated with the perception of appraisal, belonging, or self-esteem social support. The frequency of others responding to one’s status posts was not significantly associated to the perception of any type of social support. The implications of these findings for theory, research, and social work practice are explored.
Acknowledgements

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Chapter One: Introduction

Past studies on communication and social support have conceptualized communication in its traditional forms; face-to-face interactions, letters written on paper, and phone calls (e.g. Heller, Thompson, Trueba, Hogg, & Vlachos-Weber, 1991; Kirmeyer & Lin, 1987; Lazar & Erera, 1998; Lemieux, 2002; Matthews & Dunkle, 2004; Rudy, Rosenfeld, Galassi, Parker, & Schanberg, 2001). With the development of the Internet, computer mediated communication, which is any interaction that uses a computer as a means of conveying a message between people, has begun to be considered in the study of social support. Studies have been conducted exploring instant messaging, email, message boards, and interactions in multi-user virtual environments (MUVEs) (e.g. Dupuis & Ramsey, 2011; Eden & Heiman, 2011; Ruble, 2011).

Social networking websites have incorporated many of the elements of Internet communication and formalized the connections between individuals. These websites have become among the most popular websites on the Internet, visited regularly by the majority of Internet users (Pew Research Center, 2011). The most popular social networking website in the world and in the United States is Facebook.com (Alexa.com, 2013), a website visited daily by almost half of internet users in the United States, with an average of 33 minutes per visitor spent on the website each day (Pew Research Center, 2013). Despite the large investment of time by a major segment of the United States population, there is very little known about the relationship between communication
using a social networking website, such as Facebook.com, and how an individual perceives social support.

It is important to explore the relationships between communication on social networking websites and perceived social support independently of other forms of communication because, while there are many similarities between traditional forms of communication (e.g. face-to-face conversations, phone calls, or written letters) and communication on social networking websites, there are also major differences between them. As a result research in other forms of communication cannot be assumed to apply to this method of communication.

One important difference between traditional forms of communication and communications on social networking websites is that communication on social networking websites can be a very public process. Communication can be sent to and subject to response by all of one's connections on the website. In some cases the very act of communication opens up the conversation to those who are connected to any participant in the conversation, even if they are unknown to the original communicator. This difference is the reason that public communication on social networking websites was specifically explored in this dissertation. Another important difference between most traditional forms of communication and communication through social networking websites is the relative unimportance of distance between individuals engaged in communication on social networking websites while still allowing near-instantaneous communication. Without a need to communicate in person, new patterns of communication can emerge alongside traditional patterns of communication. Studies suggest that internet users supplement, rather than supplant, the patterns of offline
communication with online communication (Hampton, 2001; Wellman, Haase, Witte, & Hampton, 2001), and to some degree this holds true for social network website users (e.g. Takhteyev, Gruzd, & Wellman, 2012). Communication with individuals in pre-existing relationships tends to be the primary use of social networking websites (Moreau, Roustit, Chauchard, & Chabrol, 2012; Takhteyeva et al., 2012). However, these websites also promote communication between individuals who have not developed much, if any, relationship outside of the social networking website (Manago, Taylor, & Greenfield, 2012). Although not a majority of interactions, a sizable proportion of communication (10%) occurs between individuals that have no formal connections outside of these websites and an even larger proportion (42%) occurs between individuals who are unable to meet locally (Golder, Wilkenson, & Huberman, 2007).

**Importance of the Problem**

The fields of sociology, psychology, and social work have investigated the impact of social support on individuals (e.g. Cobb, 1976; Cohen, Towbes, & Flocco, 1988; House, Umberson, & Landis, 1988; Kadushin, 1999; Kissane & Clampet-Lundquist, 2012; Krause, 2007; Nelson, 2000; Phillips, Bernard, Phillipson, & Ogg, 2000; Wills & Cleary, 1996). The presence of social support has been connected to a wide variety of outcomes such as mental and physical outcomes in the chronically ill (e.g. Chou, Stewart, Wild, & Bloom, 2012; Kroenke et al., 2012; Waters, Liu, Schootman, & Jeffe, 2013), reduced impact of stress or stressful life events on mental health (e.g. Choi & McDougall, 2007; Coker et al., 2002; Maulik, Eaton, & Bradshaw, 2010), and mitigating the negative impact of poverty (e.g. Ajrouch, Reisine, Lim, Sohn, & Ismail, 2010; Attree, 2005; Henly, Danziger, & Offer, 2005). Thus researching social support in the realm of
Facebook is important to a gain better understanding of factors contributing to mental health functioning in the 21st century.

**Social work implications.** In particular, the profession of social work may benefit from discovering whether or not relationships exist between aspects of communication using social networking websites and perceived levels of social support. Social workers are the most numerous mental and behavioral health professionals in the United States (National Association of Social Workers, n.d.). Perceived social support has a buffering effect between stress and psychological distress (Barrera, 1986, Cohen & Hoberman, 1983). Understanding whether or not there is a relationship between perceived social support and a common activity of many people in the United States would contribute to the ability of social workers to assess individuals and plan treatments for existing and future clients. Because the value of different types of social support varies based upon the situation faced by an individual (Cohen & McKay, 1984), understanding whether or not there is a relationship between levels of perceived social support and frequency of communication on social networking websites would be a greater benefit to social work practice if it were explored in the context of each type of support.

Many of the researchers call for consideration of social support in interventions (e.g. Beaulieu et al., 2012; Benda, 2001; Bertera & Bailey-Etta, 2001; Cunningham & Zayas, 2002; Hernandez-Plaza, Alonso-Morillejo, Pozo-Munoz, 2006; Kelley, Whitley, & Sipe, 2008; Kulkarni, Bell, Lein, Angel, & Mason, 2008; Lee, 2009; Marrow, 2000; McDonald et al., 2009; Redman, 2009; Richman, Rosenfeld, & Bowen, 1998; Shannon, & Bourque, 2006; Sheppard, 2004; Spezaile & Gopalakrishna, 2004; Thompson &
Peebles-Wilkins, 1992; Tyuse, Hong, & Stretch, 2010; Zeman & Bulia, 2006) and some call for a greater understanding of social support as it may impact clients of social workers (Benda, 2001; Kelley, Whitley, & Sipe, 2008; Lee, 2009; McDonald et al., 2009; Redman, 2009).

**Theoretical Perspectives of Social Support**

This section of the dissertation discusses the communicative nature of social support and proposes a theory that would support the exploration of the frequency of communication on social networking websites as a factor in the perception of social support.

**The communicative nature of social support.** Obtaining and providing social support is an inherently communicative process. Burleson, Albrecht, Goldsmith and Sarason (1994, p. xvii-xviii) argue that although communication may not be directly measured in all constructs of social support, it is implied as means of creating and maintaining the relationships through which social support is transferred. Even constructs that measure the perception of social support are based upon the communicative process as the perception is based on current or past communicative interactions. Burleson et al. (1994, p. xviii) identifies three concepts that are important to studying social support: 1) the *content* of the messages in which social support is sought or expressed, 2) the *interactions* in which the supportive messages are produced and interpreted, and 3) the *relationships* that are created by and contextualize the supportive interactions in which people engage. This dissertation explored an aspect of the second concept of social support, the interactions, identified by Burleson et al. (1994) in the context of communication using social networking websites. It focused specifically on the
frequency of public communication on Facebook.com. Although this writer recognizes the value in exploring each concept, the independent variable of interest to the study being proposed, *frequency of communication*, is an aspect of the second concept, and, as such, the *content of communications* and *relationships* are beyond the scope of this project.

**Social Presence Theory.** Social Presence Theory will be discussed to provide a context for the emergence of Social Information Processing Theory.

Social Presence Theory, first proposed by Short, Williams, and Christie (1976), suggested that the effectiveness of communication with others is limited by how aware one is of others in the act of communication. Forms of communication with a greater sense of one’s interaction with others would be the most effective means of communication. When testing this theory, Christie (1974) found that text communication (letters) were the least effective means of communication followed by audio (speakers/phone) communication, then visual (television/video) communication, and with face-to-face communication as the most effective means of communication.

In its original form, Social Presence Theory proposed that there was always a most effective means of communication and a least effective means of communication. The means of communication was a limiting factor in completing tasks and developing relationships. Under the scrutiny of research (Johansen, Vallee, & Spangler, 1988; Rafaeli, 1988; Walther, 1992) that indicated that individuals have an impact on the quality of the communication, Social Presence Theory would eventually prioritize the interaction between individuals over the means of communication (Shin, 2002). However, the inadequacies of the original version Social Presence Theory would lead to
the development of an alternative theory of communication, Social Information Processing Theory, which supports the exploration of the frequency of communication on social network websites in relationship to the perception of social support.

**Social Information Processing Theory.** Walther (1992) proposed Social Information Processing Theory as an alternative to Social Presence Theory to explain how deep and meaningful relationships can develop using computer mediated communication despite the limitations of the means of communication. Social Information Processing Theory suggests that users of online social networking websites can obtain social support despite the limitations imposed upon them by the organization of the social network websites and the forms of communication the websites support. Limitations imposed by social networking websites include restricting communication between individuals who do not have a formally recognized social connection and encouraging communication between individuals who are available to view all those that know the individual. Instead of being bound by the restrictions of computer mediated communication, users adapt to them. In text based environments this may include increasing or decreasing the depth of personal information conveyed, being more active in information seeking about others, using timing of communication to convey meaning, and taking greater or less time to compose messages exchanged (Farrer & Gavin, 2009; Tidwell & Walther, 2002; Walther, 2007; Walther, Anderson, & Park, 1994; Walther & Bunz, 2006).

Frequency of communication may have the greatest impact on developing relationships in computer mediated communication (Walther, 1993). Frequency of communication impacts how individuals view each other when using computer mediated
communication in ways that are not reflected in face-to-face communication. Face-to-face communication results in strong impressions of others being created by an individual with little change in how an individual is perceived over time (Walther, 1993). In comparison, computer mediated communication results initially in weak impressions of others being created by an individual with a greater possibility of strengthening that impression over time with further communication (Walther, 1993). Although including visual information, such as photos or videos, in computer mediated communication has been found to improve communication in task oriented groups, it does not necessarily result in faster and stronger initial impressions (Gergle, Kraut, & Fussell, 2004). This may be due to a tendency of those who use computer mediated communication to prioritize the information they gain from communications with other individuals over visual representations of them, particularly in environments in which one is uncertain that the visual representation of the individual being communicated is an honest representation (Antheunis, Valkenburg, & Peter, 2010).

**Conceptual and Operational Definitions**

This dissertation explores relationships between the frequency of public communication on the social networking website Facebook and the level of social support an individual perceives. For the purpose of this dissertation the following definitions apply:

*Public Communication:* Interactions between an individual and others, groups or individuals, which are observable on that individual's main Facebook page, commonly referred to as a "wall". This included an individual posting a message on their wall, and individual responding to posts that are on their wall, and others responding to posts on an
individual's wall. In this dissertation this concept was measure by self-report of participants using a question with a six point Likert scale response ranging from *several times a day* to *never*. It also included a *don't know* option.

**Social Networking Website:**

"web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2008, para. 4).

In this dissertation this concept refers to the nine most popular social networking websites in the United States, based on number of user visits per day, as measured by Axia.com, a website that aggregates data on internet use. Participants indicated the use of other social networking websites in the survey without specifying the specific website.

**Social Support:** Access to four different types of resources (as categorized by Cohen, Mermelstein, Kamarack, & Hoberman, 1985) obtained through interaction with others. These four types of support are:

- **Self-esteem:** recognition of the value of the individual and the individual's contributions by others (Cohen et al., 1985). This was measured using ten questions in the Interpersonal Support Evaluation List (ISEL) designed to measure the perception of this type of social support. Values of zero to four were assigned to each response. A mean value for each participant representing their overall level of self-esteem social support, ranging from zero to four, was created through aggregation of the values and dividing by ten.

- **Appraisal:** "Provision of advice and guidance" (Uchino, 2004, p. 17) from others. An example of this would be whether or not a respondent felt that there was someone with whom they could discuss sexual problems (Cohen et al., 1985). This was measured
using ten questions in the ISEL designed to measure the perception of this type of social support. Values of zero to four was assigned to each response. A mean value for each participant representing their overall level of appraisal social support, ranging from zero to four, was created through aggregation of the values and dividing by ten.

*Tangible*: "Provision of material aid" (Uchino, 2004, p. 17) such as money for rent or food when one is hungry. This was measured using ten questions in the ISEL designed to measure the perception of this type of social support. Values of zero to four were assigned to each response. A mean value for each participant representing their overall level of tangible social support, ranging from zero to four, was created through aggregation of the values and dividing by ten.

*Belonging*: "Shared social activities, sense of social belonging" (Uchino, 2004, p. 17). This was measured using ten questions in the ISEL designed to measure the perception of this type of social support. Values of zero to four were assigned to each response. A mean value for each participant representing their overall level of belonging social support, ranging from zero to four, was created through aggregation of the values and dividing by ten.

*Perception of Social Support*: A subjective measurement of the level of social support an individual believes they can access as measured by the General Population Form of the Interpersonal Support Evaluation List (ISEL). It does not reflect the actual social support available to the individual, such as whether or not they have accessed tangible goods through others. Instead it measures whether or not an individual believes others would provide them with tangible goods, or other forms of support, should they request it.
Research Questions

This dissertation explores relationships between the frequency of public communication on the social networking website Facebook and the level of social support an individual perceives. This dissertation seeks to make a contribution to the social work body of knowledge of social support by addressing the following:

Is there a relationship between the frequency of public communication on Facebook and the amount of social support (self-esteem, appraisal, belonging, and tangible) an individual perceives?

In order to address the previous question, the following three questions were explored:

1. Considering each type of social support (self-esteem, appraisal, tangible, and belonging), is there a significant relationship between the frequency of posting Facebook statuses and the amount of social support an individual perceives?

2. Considering each type of social support (self-esteem, appraisal, tangible, and belonging), is there a significant relationship between the frequency of others responding to an individual's Facebook status and the amount of social support an individual perceives?

3. Considering each type of social support (self-esteem, appraisal, tangible, and belonging), is there a significant relationship between the frequency of responding to other's Facebook status and the amount of social support an individual perceives?
Chapter Two: Literature Review

Social Support

This section of the literature review discusses major concepts of social support that are relevant to the dissertation.

The history of research in social support by social work researchers is substantial (e.g. Aron & Lorion, 2003; Beaulieu et al., 2012; Benda, 2001; Bertera & Bailey-Etta, 2001; Cunningham & Zayas, 2002; Hernandez-Plaza, Alonso-Morillejo, & Pozo-Munoz, 2006; Kelley, Whitley, & Sipe, 2008; Kulkarni et al., 2008; Lee, 2009; Marrow, 2000, McDonald et al., 2009; Redman, 2009; Richman, Rosenfeld, & Bowen, 1998; Shannon, & Bourque, 2006; Sheppard, 2004; Spezaile & Gopalakrishna, 2004; Thompson & Peebles-Wilkins, 1992; Tyuse, Hong, & Stretch, 2010; Zeman & Bulia, 2006) suggesting the value of further exploring more aspects of social support. Much of this research is exploratory in nature (e.g. Benda, 2001; Hernandez-Plaza et al., 2006; Kulkarni et al., 2008; Lee 2009; Marrow, 2000; Redman, 2009; Richman et al., 1998; Spezaile & Gopalakrishna, 2004; Thompson & Peebles-Wilkins, 1992; Zeman & Bulia, 2006). Studies in social work research using social support interventions have shown that interventions can encourage the development of social support (Shannon & Bourque, 2006; Sheppard, 2004; Tyuse et al., 2010) and that social support created through interventions has positive relationships to physiological and psychological well-being (e.g. Bertera & Bailey-Etta, 2001; Kelley et al., 2008; McDonald et al., 2009).
Types of social support. Not all social support is the same. Different types of social support are useful, and perceived as useful, in different types of situations (Cohen & McKay, 1984). Uchino (2004) identified four types of social support: emotional, informational, tangible, and belonging. According to Uchino (2004) emotional support is "expressions of comfort and caring" (p. 17), informational support is "provision of advice and guidance" (p. 17), tangible support is "provision of material aid"(p. 17), and belonging support is "Shared social activities, sense of social belonging" (p. 17). Cohen, Mermelstein, Kamarack, & Hoberman (1985) also identify four types of social support; self-esteem, appraisal, tangible, and belonging. The two like-named types of social support by Uchino (2004) and Cohen et al. (1985) are equivalent. Also Cohen et al. (1985) appraisal support is similar to Uchino's (2004) definition of informational support. A review of the instrument to measure perceived social support (i.e., Interpersonal Support Evaluation List) by Cohen and colleagues (1985), indicates that their definition of self-esteem support is similar, if not exactly the same, as Uchino's (2004) definition of emotional support.

Measuring different concepts as social support. Barrera (1986) asserts that social support has been measured in so many different ways that it is practically meaningless as a definitive term for research. The inconsistency in defining social support is reflected in how it is measured, resulting in several unique but related concepts being labeled as "social support". In some studies, the characteristics of social networks are treated as social support. These can include the number of individuals within social networks, the number of connections an individual has, and the nature of the relationships between members of the social network (e.g. Biegel, Magaziner, & Baum, 1991;
Cetingok, Hathaway, & Winsett, 2008; Lamarca, Leal, Sheiman & Vettore, 2013). Other studies measure actual exchanges of goods, information that pass between individuals in a social network, and messages that network members find supportive (Holmstrom, 2010; Pudlinski; 2003, Tracy, Munson, Peterson, & Floersch, 2010). A third way that social support has been measured is from the perspective of the individual regarding how much social support they perceive can be accessed if needed (e.g. Peterson & Albrecht, 1996; Tracy, 1990; Wilks & Spivey, 2010). This method does not require the support to be accessed or even useful when accessed, just that the individual believes that it can be accessed. The first method is more accurately a measure of the components of social networks (social embeddedness), the second of received social support, and the third of perceived social support. This dissertation focused on perceived social support.

The three concepts of social support are related, but the degree to which they are related is uncertain. Barrera's (1986) review of social support literature did not find that social embeddedness was related to perceived or received social support. Despite these findings, recent studies have found a relationship, although not necessarily a straightforward relationship (Kim & Lee, 2011; Manago, Taylor, & Greenfield, 2012). For example, Kim and Lee, (2011) and Manago, Taylor, and Greenfield, (2012) have found that as an individual’s Facebook networks increased in size, their perception of the strength of their social support also increased. This relationship reversed itself as networks exceeded a certain size, suggesting that at a certain point the resources needed to maintain the network exceeded the perceived benefits of doing so. The connection between received social support and perceived social support may not be that strong, a
meta-analysis (Haber, Cohen, Lucas, & Baltes, 2007) showed only a weak relationship ($r = .35$).

**Perceived social support.** Barrera (1986) states that perceived support is a "cognitive appraisal of being reliably connected to others" (p. 416). Although measures of social support may consider the availability, adequacy, and satisfaction with support, they do not measure the embeddedness of an individual within a social network (Barrera, 1986, p. 416-417). Perceived social support has been strongly associated with reduced psychological distress as the result of stressful life events, more strongly than measures of received social support (Cohen & Hoberman, 1983) or social embeddedness (Barrera, 1986). This dissertation focused on perceived social support due to the centrality of the concept in the research questions. As a result of the focus on perceived social support, the Stress Buffering Theory of Social Support will be described as a context in which to consider the research.

**Stress Buffering Theory and perceived social support.** The stress buffering theory relies heavily on the work by Lazarus (1966; 1999) and Lazarus and Folkman (1984). Stress buffering suggests that social support moderates the impact of stressful events on physical and mental health outcomes. Cohen and McKay (1984) indicate that perceived social support may act as a buffer to psychological distress in multiple ways. Individuals may assess different types of social support in deciding whether or not a stressor is a threat to their well-being. In this process, individuals evaluate whether social support is present or absent in several areas. It is evaluated in terms of access to tangible assistance through support networks (tangible support), whether or not individuals believe they are part of a group that can provide assistance (belonging support), whether
or not others will support them emotionally (self-esteem support), and even whether or not others will be able to provide them appropriate information which can be used for decision making regarding the stressors (appraisal support). If the individual perceives social support in an area to exist, it is possible that the stressor will not be viewed as a threat, which will reduce or eliminate the possibility of psychological distress. If the stressor is viewed as a threat, an individual can go through a series of evaluations of their social support in order to determine whether or not that support is sufficient to address that threat, either partially or in full. The buffering theory of social support proposes that individuals who perceive sufficient social support of the appropriate type to address a threat have fewer occurrences of psychological distress and less severe incidents of psychological distress. This is consistent with Lazarus' (1966; 1999) model of coping, in which the appraisal process moderates the relationship between stress and psychological distress. Cohen and McKay (1984) argue that this is a cognitive process, which can result in a subjective measure of social support that is inconsistent with received social support. Gore (1985) also distinguishes between what support is available and the appraisal of that support by an individual under stress, indicating the former is a 'coping resource' and the latter is a 'coping activity' (p. 266-268).

**Factors that influence the perception of social support.** Gender, marital status, self-esteem, perceived level of stress, and socio-economic status have been linked to levels of perceived social support, with predictors of higher levels of social support being identification as a woman (Stroebe & Stroebe, 1983), being married (Stroebe & Stroebe, 1983), higher self-esteem (Rodriguez & Cohen, 1998), lower perceived levels of stress (Cohen & Hoberman, 1983), and higher socio-economic status (Turner & Noh, 1983). In
addition, other variables may influence the analysis. Although Barrera (1986) suggests that factors of social embeddedness, such as social network size, are not related to perceived social support some studies (Kim & Lee, 2011; Manago, Taylor, & Greenfield, 2012) indicate that this may not be accurate when considering social connections on social networking websites. As a result, the size of an individual's local social network and the number of connections an individual has on a social networking website was considered in this dissertation.

**Students and Social Support**

This dissertation sought to sample college students. As a result key points regarding social support and college students will be discussed in this section of the literature review.

**Emerging Adulthood as a framework for viewing social support in students.**

Arnett (2000) identifies the late teens and early twenties, the age most individuals enter college, as a time of transition and upheaval in an individual’s life. Individuals are seeking to create an identity that is separate from their parents. A common experience for many youth used in this process is moving away to college. Moving away to college has other impacts on a young adult’s life. Friendship networks that benefitted them prior to college tend to break down during this time period and individuals pursue their own goals in life, a process that can be accelerated by distance created between members of these networks (Paul & Brier, 2001). While existing social networks may be breaking down, risk taking behavior is at its height in the early stages of emerging adulthood, while mental health indicators, particularly an increase in depression and a decrease in self-esteem, are seen at the beginning of this developmental stage (Arnett, 2007).
Social embeddness and college students. As mentioned previously, social embeddedness and perceived social support, while frequently referred to as social support are not really the same concept (Barrera, 1986). However, this writer believes it is worth mentioning the relationship between high levels of social support and a reduction of negative issues faced by college students. The development of social networks of close friends in the college setting has been found to reduce the chance of dropping out of college and is associated with higher grade point averages (Swenson, Nordstrom, & Heister, 2008; Gogoun, Heister, & Nordstrom, 2010-2011). Greater interaction between faculty and students also reduces drop-out rates among college students (Pascarella & Terenzini, 1979). Even nutrition is impacted by social networks, students reported that social embeddedness was a key factor in maintaining proper nutrition (Deliens, Clarys, Bourdeaudhuij, & Deforche, 2014).

Perceived social support and college students. While the focus of social support studies in college students has largely been social embeddedness, the perception of social support has not been ignored. Brissette, Scheier, and Carver (2002) found that higher levels of perceived social support resulted in lower levels of depression and an increase in closer friendships, however these results were limited to students with an optimistic outlook. In addition, a student’s level of perceived social support is associated with their ability to express their anger in a healthy manner, with low perceived social support associated with lowered ability to express anger in a healthy manner and a greater likelihood of suppressing one’s anger (Dahlen & Martin, 2005). These relationships are noteworthy in a population that faces poor indicators of mental health at the beginning of the emergent adult developmental stage (Arnett, 2007). Risk taking behavior may also be
influence by the perception of social support as individuals with lower levels of perceived social support are more likely to be influenced by their peers in regards to their alcohol consumption, making those with low perceived social support more likely to binge drink (Cullum, O’Grady, Sandoval, Armeli, & Tennen, 2013). As with mental health indicators, this is notable due to the high level of risk taking behavior during this developmental stage (Arnett, 2007).

**Perception of social support and variations in populations.** The perception of social support may not be experienced by all individuals equally. One group that may evaluate perceived social support differently, depending on their experiences, are African-Americans (Constantine, Robinson, Wilton, & Cadwell, 2002; Edman & Brazil, 2009; Negga, Applewhite, & Livingston, 2007). Perceived social support is positively associated with grade point averages (GPA) in Caucasian students but has no relationship to GPA in African American students (Edman & Brazil, 2009). In traditionally Caucasian schools, perceived social support does not act as a protective factor in dealing with stressful situations for minority African-American students, which is not the case in historically black colleges and universities (Negga, Applewhite, & Livingston, 2007). Even within African-American and other populations individuals may evaluate the perception of social support differently based on other characteristics (Constantine, Robinson, Wilton, & Cadwell, 2002). For example, male minority African-American and Latino students in predominantly Caucasian universities report less satisfaction with their perceived social support than female minority African-American and Latina students in the same universities (Constantine, Robinson, Wilton, & Cadwell, 2002).
However, female college students who were not-traditional students, such as those who were not young adults and those who had children, believed that the strength of their perceived social support contributed positively to self-efficacy in career decision-making (Quimby & O’Brien, 2004). Additionally, higher levels of perceived social support were associated with reduced difficulty transitioning to college and reduced difficulty making career decisions in lesbian, gay, bisexual, and transgender college students (Schmidt, Miles, & Welsh, 2011).

**Major Studies in Internet Communication and Social Support**

This section of the literature review will analyze studies of Internet communication and social support, focusing primarily on studies that explored communication through social networking websites and relationships of that communication to perceived social support.

**Research in computer mediated communication.** As the prevalence of computer mediated communication has increased, researchers have begun to study its impact on social support and outcomes, particularly depression and anxiety, which are related to social support (Lazarus and Folkman, 1984). Initially, studies indicated an inverse relationship between the frequency of computer mediated communication use and both social support and outcomes related to social support, with greater amounts of computer mediated communication associated with lower social support and higher levels of depression, loneliness, and anxiety (e.g. Kraut et al., 1998; Sanders, Field, Diego, & Kaplan, 2000). More recent attempts to explore this subject have shown a much more complex situation. Pre-existing circumstances also complicate how time using the Internet is related to social support and depression. Over time, individuals with high
levels of starting social support have increased severity of depressive symptoms as their internet usage increases. This is not true of individuals with low levels of starting social support; as their internet usage increases, they have increased levels of social support without increased severity of depressive symptoms (Bessiere, Kiesler, Kraut, & Boneva, 2008). Certain types of internet activity were associated with higher levels of perceived social support. Individuals who used the Internet to escape or play games did not have higher levels of perceived social support (Bessiere et al., 2008), nor did individuals who used the Internet for tasks such as hacking, stealing, lurking, and fraud (Mitchell, Lebow, Uribe, Grathouse, & Shoger, 2011). On the other hand, those who played interactive games on the Internet did have higher levels of perceived support (Mitchell, et al., 2011) as did those that used the Internet to interact with family and friends (Bessiere et al., 2008). The type of computer mediated communication used is also associated with structural measures of social support, with greater email use connected to larger social networks (Franzen, 2000). This finding would make sense, as those that have larger social networks may view email as a resource effective manner to maintain their social connections in the network.

**Research in perceived social support specific to social networking websites.** A limited number of studies have focused on perceived social support in relation to social networking site usage (Asbury & Hall, 2013; Baker and Moore, 2008; Ballantine & Stephenson, 2011; Cavallo et al., 2012; Kim & Lee, 2011; Liang, Ho, Li, & Turban, 2011; Manago, Taylor, & Greenfield, 2012; Vitak & Ellison, 2012; Wright, 2012a, Wright, 2012b; Wright et al., 2013). What research has been done regarding perceived social support on social networking websites focuses heavily on the social networking
site Facebook (Asbury & Hall, 2013; Ballantine & Stephenson, 2011; Cavallo et al., 2012; Kim & Lee, 2011; Manago, Taylor, & Greenfield, 2012; Vitak & Ellison, 2012; Wright, 2012a, Wright, 2012b; Wright et al., 2013), with limited study of perceived social support in other social networking websites (Baker and Moore, 2008; Liang et al., 2011).

**Social network website usage and types of perceived social support.** Much of the research on social support and social networking websites has focused on emotional support (Ballantine & Stephenson, 2011; Cavallo et al., 2012; Liang et al., 2011; Vitak & Ellison, 2012; Wright, 2012a, Wright, 2012b; Wright et al., 2013). The studies do not agree on whether there is a relationship between social networking website usage and the perception of emotional support. While Cavallo et al. (2012) did not find a relationship many other studies (Ballantine & Stephenson, 2011; Liang et al., 2011; Vitak & Ellison, 2012; Wright, 2012a, Wright, 2012b; Wright et al., 2013) did find a relationship. Not all of these relationships were simple. Many of these studies did find a positive relationship, between social network website usage and social support, but the strength of the relationship was dependent on other factors such as communication style (Ballantine & Stephenson, 2011; Wright, 2012b; Wright et al., 2013), who could view the communication (Vitak & Ellison, 2012), and how attractive they considered those who communicated with them (Wright, 2012a). Some research (Ballantine & Stephenson, 2011; Cavallo et al., 2012; Liang et al., 2011; Vitak & Ellison, 2012) has looked at informational support in social networking websites. While some studies found evidence to support the relationship between the use of social networking websites and perceived informational support (Ballantine & Stephenson, 2011; Liang et al. 2011) others did not
(Cavallo et al., 2012). Vitak and Ellison (2012) had more complex findings. Their study participants reported varying levels of informational support seeking through social networking websites that were dependent on who they were connected with on those websites. One study (Baker & Moore, 2008) found a form of belonging support associated with social network usage. Individuals using Myspace to post blogs perceived themselves to be part of a greater community on the website (Baker & Moore, 2008).

**Similarities and differences of research to earlier studies.** This dissertation is the first to explore the relationship between the frequency of three types of public communication on Facebook and the perception of four types of social support, however there has been a body of research looking at some similar factors social network website usage and social support.

**Frequency of social network website usage and the relationship to perceived social support.** Only two studies, (Asbury & Hall, 2013, Manago, Taylor, & Greenfield, 2012), explored whether the frequency of using social networking websites, measured continuously, is associated with levels of social support.

Asbury and Hall (2013) compared the perception of social support among college students who were low frequency or high frequency users of Facebook. The results of this study suggested that high frequency users of Facebook perceived higher levels of social support, as defined by having better relationships with their parents and family, than lower level users of Facebook. While this study is interesting, and very relevant to this work, there is a lack of clarity as to how each group was defined. It appears that the frequency of times an individual goes to the website and whether or not the individual was an active communicator or passive observer was considered. However, it is unclear
as to whether a person who frequents the website, but does not actively engage, would be considered a low or high frequency user. The presentation of the data does suggest that these could be further clarified and perhaps they will be in future publications using the data.

Manago, Taylor, and Greenfield (2012) found no relationship between the frequency of messages sent utilizing social networking websites, whether they were sent privately or posted for public viewing, and levels of perceived social support. However, Manago, Taylor, and Greenfield (2012) did not address this in regards to different types of perceived social support, they used a composite score of perceived social support.

Other studies (Baker & Moore, 2008; Cavallo et al., 2012; Vitak & Ellison, 2012), using a binary approach to measuring social network usage (e.g. used/not used), found varying outcomes when exploring the relationship between the use of social networking websites and perceived emotional social support. Cavallo et al. (2012) did not find any significant difference in perceived social support, of any type, between a group using Facebook in a weight loss intervention and a control group using the same intervention without the Facebook component. On the other hand, Baker and Moore (2008) found that MySpace users who wrote blogs for other users to view had higher levels of perceived social support, in that they perceived to be more connected to an online community, than those that did not blog. Vitak and Ellison (2012), in a qualitative study of Facebook users, found that those interviewed had sought out and received emotional and informational support using Facebook.

Liang et al. (2011) took a different approach to studying the relationship between the frequency of social networking websites and social support. Their study explored how
frequency of use changed as a result of levels of social support obtained through the website. It was found that if social network website users perceived low levels of social support as a result of their activities on these websites, they would reduce or even stop using these websites. This result may indicate an intentional seeking of social support in social network website use, rather than an incidental relationship.

Unique contributions of research. This study explored possible relationships between the frequency of using public communication on Facebook and four types of social support: self-esteem, appraisal, tangible, and belonging. It also differentiated between three different acts of communication: posting a status on Facebook, others responding to an individual's Facebook status, and responding to other's Facebook statuses. Exploring these areas may provide more detailed information on any relationships between perceived social support and communication on social networking websites, such as Facebook, than explored in previous studies.
Chapter Three: Methodology

This study is descriptive. It sought to obtain cross-sectional and survey based data. The unit of analysis is the individual.

Sample

This study used a sample of convenience from the student body of the University of Denver. The sample was obtained from the Graduate School of Social Work and the Emergent Digital Practices program, which consisted primarily of undergraduates. Sample selection from these two organizations occurred due to the ability to use existing contacts to facilitate the study. Other avenues of obtaining a sample through student organizations, alternative schools within the University of Denver, and obtaining a sample from the entire student body of the university were explored, however these efforts did not yield any results. The demographics of the University of Denver, the Graduate School of Social Work, and the emergent Digital Practices Program are discussed below.

In the spring of 2012, the student enrollment at the University of Denver was 10,810, of which 5,770 were graduate students. Fifty-seven percent of students identify as female and 43% of students identify as male. In regards to race/ethnicity, 75.6% of students identify as White and 18.9% identify as a member of a minority; with 8% identifying as Hispanic/Latino, 4% as Asian, 3.7% as Black/African-American, 2.5% as being of two or more races, and less than one percent identifying as American
Indian/Native Alaskan or Native Hawaiian/Other Pacific Islander. The majority, 71.2%, of University of Denver students attend classes full-time, however there is great variation between graduate students and undergraduate students, with 50.1% of graduate students and 91.6% of undergraduate students attending classes full-time. More than 91% of undergraduates are students that would be considered to be of the traditional age associated with college, 18-22. The majority of graduate students, 69%, are aged 30 or less. Tuition costs for full-time undergraduate students was $36,936 with 16.6% of first year undergraduate students receiving Pell Grants (University of Denver, 2012).

Demographic statistics were available regarding the 508 students at the Graduate School of Social Work. The majority of the students (80.1%) identify as Caucasian, with 11% identifying as Hispanic, 5.4% identifying as another domestic minority (e.g. American Indian/Native American, Asian, Black/African American, Hawaiian/Pacific Islander, or more than one race), and 3.2% not providing information on this characteristic. A small portion of students (1%) are international students. The majority of the students identify as female (88.3%), while 10.7% identify as male and 1% identify as other or did not provide this information. The age of the students ranges from 21 to 58 with a median age of 26. All students in the Graduate School of Social Work are graduate students (personal communication, May 2014).

Some demographic statistics were available regarding the sixty-two undergraduate students that had declared Emergent Digital Practices as a major. The majority of the students (72.6%) identified as Caucasian, with 16.1% identifying as Asian, 4.8% identifying as Black/African-American, 3.2% identifying as being two or more races, and 3.2% not providing information on this characteristic. These categories
were mutually exclusive which means that the individuals that identify as being two or more races could identify as one or more of the races included in other responses. Only 4.8% of the students identified as being Latino/Hispanic. The majority of the students (62.9%) identify as male and the remainder (37.1%) identify as female. These students are overwhelmingly (95.2%) full-time students (personal communication, May 2014).

**Instrumentation**

A combination of instruments was used to collect the data for this study to create demographic variables, interpersonal support, self-esteem, perceived stress, Facebook usage, social network usage, and size of network. These instruments used included the General Population form of the Interpersonal Support Evaluation List, the Rosenberg Self-Esteem Scale, the four-item Perceived Stress Scale, and questions adapted from a Pew Internet and American Life survey. Each scale is described in further detail below.

**Demographic Items.** The following discusses the measurement of demographic variables.

**Academic status.** The item used to measure academic status was identical to a question used to measure academic status on the 2010 United States Census (United States Census Bureau, n.d.).

**Age.** The item to measure age was created by this researcher. It measured age by asking an open-ended question the participant could respond to with any three digit number.

**Employment status.** The item used to measure employment status was identical to a question to measure employment status on the 2010 United States Census (United States Census Bureau, n.d.).
**Gender identity.** The item to measure gender identity was created by this researcher. Participants were allowed to respond to a multiple choice question asking which gender they identified most with. Choices available to the participants were *female, male, and other.*

**Hispanic/Latino origin.** The item used to measure Hispanic/Latino origin was identical to a question used to measure Hispanic/Latino origin on the 2010 United States Census (United States Census Bureau, n.d.).

**Race.** The item used to measure race was identical to a question used to measure race on the 2010 United States Census (United States Census Bureau, n.d.).

**Relationship status.** The item used to measure relationship status was created by this researcher. Participants were allowed to respond to a multiple choice question that indicated they were *married, single, or not married but in a committed relationship.*

**Socio-economic status.** The first item regarding socio-economic status was created by this researcher. Participants were asked, using a multiple-choice question, whether or not they supported themselves or were supported by others.

In order to assess the income level of the source of a participant’s financial support a second item was used. These items were adapted from a question regarding household income on the 2010 United States Census (United States Census Bureau, n.d.).

**Independent Variables not measured in the Demographic Items.** The following discusses the measurement of independent variables that were not also included in the demographic items.

**Frequency of communication on Facebook.** The items used to measure this variable were adapted from a Pew Internet and American Life Project (2012b) survey.
which, measured the frequency in which study participants checked their Facebook home page. Three questions were created to measure the frequency in which participants created a status update, the frequency which they responded to a status update, and the frequency which others responded to their status update.

The responses to the items were changed from the original responses of: *every day, several times a week, at least once a week, less than once a week, never/cannot do this*, and *don't know*. An additional response of *several times a day* was added. The response *every day* was changed to *a few times a day*. The first change allowed for greater variation in rates of communication to be discovered and the second change reduced confusion between the newly added response and the previous response based on wording.

*Rosenberg Self Esteem Scale.* The Rosenberg Self Esteem Scale was developed by Dr. Morris Rosenberg (Rosenberg, 1965). The scale consists of ten statements that the respondent is asked to measure their level of agreement with using a four point Likert scale, with responses ranging from "strongly agree" to "strongly disagree". Items are coded with values between "0" and "3", with some items being reverse coded to create consistency in measuring the concept. A composite score of these values, between zero and thirty, is used to measure self-esteem. Higher scores reflect higher levels of self-esteem.

The Rosenberg self-esteem scale is a well establish scale used to measure self-esteem in studies in several languages including Amharic (e.g. Wondie, Zemene, Reschke, & Schroder, 2012), Arabic (e.g. Ayyash-Abdo & Alamuddin, 2007) Chinese (e.g. Chan, Li, Chan, & Lopez 2012; Ren, Wang, Yang, Li, & Higgins, 2011), Dutch (e.g.
Papageorgiou, Vermeulen, Schroevers, Buskens, & Ranchor, 2013) French (e.g. Ayyash-Abdo & Alamuddin, 2007; Vallieres & Vallerand, 1990), Japanese (e.g. Ueno, Takano, Asai, & Tanno, 2010), Persian (e.g. Lakdizaji, Abdollahzadeh, Hassankhanih, & Kalantari, 2013), Portuguese (e.g. Moutao, Alvis, & Cid, 2011), Spanish (e.g. Plazaola-Castano, Ruiz-Perez, Escriba-Aguir, Jimenez-Martin, & Hernandez-Torres, 2009), Turkish (e.g. Alti, Eskin, & Dereboy, 2009). The scale has been found to be reliable (Cronbach’s α = .88) (Gray-Little, Williams, & Handcock, 1997). It has been used to test the validity of other self-esteem scales such as the Single Item Self-Esteem Scale (Robins, Hendin, & Trzesniewski, 2001), in which a high level of correlation ($r = .72-.80$) between the two scales was indicated when college students were sampled.

**Perceived Stress Scale-4.** Derived from a ten-item scale of the same name, the PSS-4 (Cronbach’s α = .84 - .8677) (Cohen, Kamarck, & Merremstein, 1983) asks the respondent about their feelings of being able to handle or control their life in the face of adversity. The scale uses four items each with five responses ranging from "never" to "very often". Each item is scored from zero to four and a composite score of zero to sixteen is created by adding the values together.

Validity was established in a series of studies in which the scale found to be significantly correlated ($r = .20$ to $.39$) to the number of stress full life events and the impact of those life events ($r = .33$ to $.49$) in participants (Cohen, Kamarck, & Merremstein, 1983).

**Number of connections on Facebook.** The item used to measure connections on Facebook was created for this study. An open ended question was created which participants could respond to with a number up to five digits in length.
Additional items were created to measure the number of close friends and family members a participant was connected to on Facebook. Open ended questions were created which participants could respond to with a number up to five digits in length.

**Number of social network websites used.** The items used to measure the number of social networks a participant used were developed for this study. Participants were asked to respond *yes* or *no* when asked if they used several popular social networking websites. Responses of *yes* were given a value of one while responses of *no* were given a value of zero. Response values were added together to create a continuous variable indicating the number of social networks a participant used.

**Size of locally available social network.** The items used to measure the size of an individual’s locally available social network were adapted from a study by Bessiere, et al. (2007) in which an analysis of the relationships between perceived social support, locally accessible social network, and internet activity were made.

Two additional items were also created for this study for participants who had responded to the item on relationship status by selecting the *married or not married but in a committed relationship* for further information. The first item asked whether or not their partner lived with them with possible responses of *yes* and *no*. Participants who responded to this item with *no* were asked if their partner lived within an hour’s drive of them, with binary responses of *yes* and *no*.

**Dependent Variables.** The following discusses the measurement of the dependent variables.

**Interpersonal Support Evaluation List.** The ISEL is a forty-item scale that measures four types of perceived social support: appraisal (also known as *informational*...
support), belonging, self-esteem, and tangible. Overall scores from the instrument have been found to be reliable (Cronbach’s $\alpha = .88 - .90$). Subscales have been found to have varying degrees of reliability with belonging support (Cronbach’s $\alpha = .73 - .78$), appraisal (Cronbach’s $\alpha = .70 - .82$), and tangible support (Cronbach’s $\alpha = .73 - .81$) having higher reliability than self-esteem support (Cronbach’s $\alpha = .62 - .73$) (Cohen et al., 1985). The general version of the instrument was found to be valid showing a significant correlations ($r = .30$) with the Moos Family Environment scale, significant correlations with the number of close family members ($r = .42$), and number of close friends ($r = .46$) an individual reports (Cohen et al., 1985). While the original instrument used dichotomous responses on each item to compile scores of zero to ten for each type of social support and zero to forty for overall social support, this study utilized a version, published on the website of The Department of Psychology at Carnegie Mellon University (n.d.), of the instrument that asks participants to respond using a four point Likert scale. In this version the following responses available to participants: "definitely true", "probably true", "probably false", and “definitely false". In accordance to the instructions on the previously mentioned website, each item was scored from zero to three and a composite score of zero to thirty was created to measure the strength of each type of perceived social support.

Although a student version is available (Cohen & Hoberman, 1983) it has been developed with a traditional undergraduate population in mind and some of the questions may not be applicable to the University of Denver student body, which is over 46% graduate level students and 28.8% part-time students. The questions on the general population version did not require the respondent to consider their answers in the context
of a school environment they may not experience, such as living in a dormitory environment.

One change was made to the instrument to more accurately reflect the experiences of the participants. One question, question ten measuring tangible support, was modified. The example of a day trip in the question was changed from "to the coast" to “to the mountains” to give an example that reflects the reality of Colorado geography.

Data Collection Procedure

As noted previously, data was collected using a sample of convenience from the University of Denver's Graduate School of Social Work and the Emergent Digital Practices program. In order to collect data from participants in the Emergent Digital Practices program an established member of the faculty in the program agreed to approach other faculty within the program regarding the study. With the approval of program faculty this researcher presented a brief description of the study to students in introductory level courses in the program. With the assistance of the faculty, an email, containing a link to the survey on Qualtrics, was sent to all students in the class. This medium allowed participants to immediately access the survey through a hyperlink included in the email. This reduced the burden on participants in completing the survey as they did not have to make an effort to mail the survey to the researcher. As all University of Denver students are provided email accounts and are provided free access to computers labs while on campus, it was not believed the electronic nature of the survey was likely to be a severe barrier in participation in the study. Students in the Graduate School of Social Work received the same information as the students in the Emergent Digital Practices program. While email was intended to be the primary means of contact
and distribution of the web address of the survey this did not prove to be the case as the study progressed. Faculty in both programs were open to this writer approaching students in a classroom setting with the details of the study and less open to using email to communicate with the participants. In order for the web address of the survey to be distributed in a manner that allowed easy recall for the participants, business cards with the web address were created and distributed during the presentations.

Internet based surveys have been found to have a lower response rate (4.7-36%) than surveys conducted using the telephone (23-30.2%) or pen and paper (7.5-45%) (Boschman, van der Molen, Frings-Dresen, & Sluiter, 2012; Potoglou, Kanaroglou, & Robinson, 2012; Sinclair, O'Tooole, Malawaraarachchi, & Leder, 2012). In accordance with the recommendations of Cook, Heath, and Thompson (2000) and Hoonakker and Carayon (2009) strategies were utilized to increase response rates. Participants were notified prior to the email distributing the survey. Emails reminding participants who had not completed the survey were sent out after a reasonable time. The number of reminder emails to any participant was limited to two as excessive reminders have not been found to increase response rate (Cook, Heath, & Thompson, 2000). Due to the reasons mentioned previously, email distribution of the survey was extremely limited. The strategies noted above were applied in cases where appropriate but the overwhelming majority of the recruitment of participants did not involve email communication in any manner.

Although incentives were not found by Cook, Heath, and Thompson, (2000) to increase response rates, Hoonakker & Carayon (2009) found the opposite. Due to the time invested by participants in completing the survey, four fifty-dollar gift cards will be
distributed to participants selected by random lottery within six months after the collection of the data. Participants who provided some form of contact information will be eligible for the lottery. This contact information was requested at the end of the survey. A hyperlink was provided that took willing participants to a separate website where contact information was collected. Laguilles, Williams, and Saunders (2011) noted that even lottery-based incentives increase response rates in surveys sent to college students.

As recommended by Yan, Conrad, Tourangeau, & Couper (2010), the expected time to complete the survey was included at the beginning of the survey. Participants that are aware in advance of the time expected to complete a longer survey are more likely to complete that survey (Yan et al., 2010)

**Risk to Participants**

An anonymous internet survey based format of the study reduced the risk to participants. Any identifying personal information, such as email or IP addresses, was not collected with the survey responses. Some participants submitted contact information for the purpose of lottery, but this data was collected and stored separately from the survey results. Upon the completion of the lottery this information will be destroyed. Some information collected during participation in the study was sensitive in nature. It was a possibility that these questions could provoke an emotional response in some participants. Participants were informed of this risk prior to the start of the study and provided the contact information to the University of Denver Health and Counseling Center. Participants were informed of their right to end their participation at any time. All data collected was stored on a password protected Qualtrics account. When data is
downloaded for analysis it was maintained on password-protected devices. Hard copies of the data were stored in a locked file cabinet.

Data Analysis Procedures

Upon the completion of data collection, responses were transferred to SPSS from Qualtrics. The data was then cleaned. Analysis began by exploring the descriptive statistics for the sample. After completion of this task, the hypotheses were tested.

Multiple regression. The hypotheses were assessed by conducting tests of multiple regression. Multiple regression is appropriate when testing hypotheses in which the dependent variable and independent variable are measured continuously and there are one or more control variables (Tabachnick & Fidell, 2007). Before the hypotheses are tested, the assumptions of multiple regression were tested.

As noted above, gender, marital status, socio-economic status, self-esteem, number of Facebook connections, size of locally available social network, and perceived stress may impact perceived social support. When appropriate these variables were held constant in the analysis. Gender and marital status were interpreted as categorical variables. Socio-economic status, number of Facebook connections, size of locally available social network, and perceived stress were interpreted as continuous variables. Separate multiple regression analysis were conducted for each type of social support (self-esteem, appraisal, belonging, and tangible) on each tested hypothesis.
Chapter Four: Results

In this chapter, the results of the analysis of the data are reported.

Sample

The total sample size of this dissertation was 166, however only 151 participants completed the survey. Recruitment for the sample occurred by presentations in university classrooms. The response rate of the study cannot be precisely calculated, due to a lack of knowledge of each class size visited. It can be estimated based on the number of classrooms visited in each department and the average size of each class. Based on these statistics the survey had a response rate of approximately 28%.

In regards to their academic status, 19.4% reported being full-time undergraduate students, 2.1% reported being part-time graduate students, 77.1% reported being full-time graduate students, and 1.4% reported not being students. The large majority of the sample self-identified as White/Caucasian (84.1%), with fewer African American/Black (2.0%), Native American/Native Alaskan (2.0%), Asian (0.6%), Pacific Islander (0.6%), and other (10.6%). These categories were not mutually exclusive, a small portion (3.0%) of participants indicated having more than one racial identity. Just under ten percent (9.7%) of the participants identified as Latino or Hispanic. As can be expected in a sample gathered from university students, the average participant was younger than the general population, with a mean age of 26.05 ($SD = 5.8$). The age of participants ranged from 18 to 56. The sample overwhelmingly identified as female (81.9%). While participants were
given an alternative to traditional ‘female’ or ‘male’ responses no participant chose to select this alternative and the remainder of respondents identified as male (18.2%).

In order to assess socio-economic status, participants were asked to identify whether they were supporting themselves or were supported by others. They were also asked the household income of the largest source of financial support. Participants reported a median household income of between $35,000 and $49,999. However, when examined more closely, there was a difference in incomes between those who supported themselves (45.1%) and those who were supported by others (54.9%). The median household income of those who supported themselves was under $15,000. Very few (10.8%) individuals who indicated they supported themselves financially reported a household income of $50,000 or more. Those who identified that others supported them reported their largest source of financial support had a median household income of $35,000 to $49,000. In contrast to those who supported themselves financially, 39.6% of individuals who were supported financially by others reported their greatest source of financial support had a household income of $50,000 or more.

Recruitment for the sample occurred by presentations in university classrooms. In regards to their academic status, 19.4% reported being full-time undergraduate students, 2.1% reported being part-time graduate students, 77.1% reported being full-time graduate students, and 1.4% reported not being students.

When reporting their employment status 27.1% of participants reported being unemployed and not seeking employment, 20.1% reported being unemployed and seeking employment, 48.6% reported being employed and working less than 40 hours a week, and 4.2% reported being employed and working 40 or more hours per week.
Participants were asked about their social network website usage to monitor the diversity of the sample. The overwhelming majority of the sample (93.9%) reported being current users of social networking websites. Facebook was the most popular social networking website (98.5%) followed by Pintrest (63.9%), Linkedin (54.3%), Snapchat (40.8%), Google (31.7%), Twitter (29.7%), tumblr (21.0%), and Meetup (13.2%). No participants reported using Tagged. Over a third (33.6%) of participants reported using a social networking website other than one of the ones listed above.

**Bivariate Analysis**

Matrices were created to determine the bivariate relationships among the variables for the total sample (see table 1). Cohen (1988) recommends defining a correlation above 0.5 as large or strong. Significant correlations were noted. The majority of the relationships fell within the small to moderate range.

**Correlations between independent variables.** Most of the correlations were low or moderate, however there were a few correlations that should be highlighted. The frequency of status posts on Facebook were found to be correlated to the frequency of others’ respond to one’s status posts on Facebook (.578). These relationships were positive, indicating that individuals with a high frequency of status posts were likely to have a high frequency of others responding to their status posts on Facebook. Self-esteem social support was correlated with lower levels of perceived stress (.580). This relationship was positive indicating that higher levels of self-esteem related to lower levels of perceived stress.

**Correlations between independent variables and dependent variables.** Most of the correlations were low or moderate, however there were a few correlations that
should be highlighted. Self-esteem social support was correlated with perceived belonging social support (.581), perceived tangible social support (.581), perceived self-esteem social support (.676), and lower levels of perceived stress (.580). These relationships were positive indicating that individuals with a higher level of self-esteem would have higher levels of perceived tangible social support and higher levels of perceived self-esteem social support.

Table 1

<table>
<thead>
<tr>
<th>Correlations</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>.083</td>
</tr>
<tr>
<td>Facebook Connections</td>
<td>.083</td>
</tr>
<tr>
<td>Family Facebook Connections</td>
<td>.113</td>
</tr>
<tr>
<td>Friend Facebook Connections</td>
<td>.289** .216*</td>
</tr>
<tr>
<td>Frequency of Status Posts</td>
<td>.069 .141 .069 .008</td>
</tr>
<tr>
<td>Frequency of Other’s Responses to Your Status Posts</td>
<td>-.008 -.272** -.053 .072 .578**</td>
</tr>
<tr>
<td>Frequency of Your Response to Other’s Status Posts</td>
<td>.124 .200* .119 .091 .460** .450**</td>
</tr>
<tr>
<td>Age</td>
<td>.064 - .263** .047 - .115 - .070 - .126 .026</td>
</tr>
<tr>
<td>Appraisal Social Support</td>
<td>.080 .081 - .010 .092 .147 - .071 - .115 .099</td>
</tr>
<tr>
<td>Belonging Social Support</td>
<td>.014 .255* .074 .257** .105 - .024 -.180* -.016 .617**</td>
</tr>
<tr>
<td>Tangible Social Support</td>
<td>.047 -.002 .158+ .196* -.200* -.200* -.150 .306** .014 .509** .727**</td>
</tr>
<tr>
<td>Self-Esteem Social Support</td>
<td>.003 .082 .041 .168 -.039 -.011 -.066 .012 .340** .553** .486**</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>.020 .061 .168+ .142 -.057 -.046 -.131 -.080 .404** .581** .581** .676**</td>
</tr>
<tr>
<td>Stress</td>
<td>.010 - .129 - .126 .031 -.064 -.017 - .054 -.087 .200** .323** .348** .326** .580**</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.079 .221* .091 .603** -.017 .013 -.018 - .136 .263** .403** .344** .242** .276** .105</td>
</tr>
<tr>
<td>Family in an Hour’s Drive</td>
<td>-.019 -.084 .194* .101 -.079 -.059 -.053 -.039 .058 .128 .202* .223** .182* .050 .388*</td>
</tr>
</tbody>
</table>

*p < .10, *p < .05, **p < .01
Correlations between dependent variables. Most of the correlations were low or moderate, however there were a few correlations that should be highlighted. Perceived appraisal social support was correlated with perceived belonging social support (.617) and perceived tangible social support (.509). These relationships were positive, indicating that individuals with a higher level of perceived appraisal social support would have higher levels of perceived belonging social support and higher levels of perceived tangible social support. Perceived belonging social support was correlated to perceived tangible social support (.727) and perceived self-esteem social support (.553). These relationships were positive indicating that individuals with a higher level of perceived belonging social support would have higher levels of perceived tangible social support and higher levels of perceived self-esteem social support.

Multivariate Regression Analysis

After the completion of the bivariate relationships the multivariate relationships were examined. The first stage was to regress the independent variables of interest; frequency of status posts in Facebook, frequency of others responding to one’s Facebook status, and frequency of one responding to other’s Facebook status, upon the outcome variables. The second stage was to regress other continuous predictive variables upon the outcome variables. The third stage was to use independent samples t-tests to determine which binary predictor variables were significant. The outcomes of these analyses were used to select predictor variables for inclusion in the final regression model to explore each research question. Variables were included in the initial multiple regression models if they approached significance in the previous stages of analysis. As can be seen in tables 1 to 8, no binary variables met the criteria for inclusion in the models. Once the
initial multiple regression models were formed some non-significant variables were eliminated from the models. The criteria used for elimination served to reduce the predictor variables without reducing the amount of variance explained by the model. Variables of interest were not eliminated in this manner. Final regression models were created (see tables 9 to 20).

Due to high levels of covariance with the outcome variables, self-esteem was eliminated as a predictor variable in all multiple regression models.

Table 2

Perceived Social Support Means by Gender Identity

<table>
<thead>
<tr>
<th>Gender Identity</th>
<th>Males</th>
<th>Females</th>
<th>( t )</th>
<th>( df )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal Social Support</td>
<td>3.31 (0.555)</td>
<td>3.49 (0.377)</td>
<td>1.512</td>
<td>27.55</td>
</tr>
<tr>
<td>Tangible Social Support</td>
<td>3.28 (0.366)</td>
<td>3.37 (0.366)</td>
<td>0.267</td>
<td>141</td>
</tr>
<tr>
<td>Belonging Social Support</td>
<td>3.25 (0.558)</td>
<td>3.28 (0.557)</td>
<td>-0.434</td>
<td>137</td>
</tr>
<tr>
<td>Self-Esteem Social Support</td>
<td>3.21 (0.417)</td>
<td>3.22 (0.359)</td>
<td>0.164</td>
<td>139</td>
</tr>
</tbody>
</table>

\(+p < .10, *p < .05, **p < .01\)
### Table 3

*Perceived Social Support Means by Marriage Status*

<table>
<thead>
<tr>
<th>Marriage Status</th>
<th>Married</th>
<th>Single/Committed Relationship</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appraisal Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.53 (.334)</td>
<td>3.45 (.425)</td>
<td>-.734</td>
<td>138</td>
</tr>
<tr>
<td><strong>Tangible Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.37 (.497)</td>
<td>3.28 (.518)</td>
<td>-.362</td>
<td>137</td>
</tr>
<tr>
<td><strong>Belonging Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.28 (.475)</td>
<td>3.37 (.468)</td>
<td>.347</td>
<td>141</td>
</tr>
<tr>
<td><strong>Self-Esteem Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.23 (.379)</td>
<td>3.23 (.366)</td>
<td>1.30</td>
<td>139</td>
</tr>
</tbody>
</table>

+p < .10, *p < .05, **p < .01

### Table 4

*Perceived Social Support Means by Single Status*

<table>
<thead>
<tr>
<th>Single Status</th>
<th>Single</th>
<th>Married/Committed Relationship</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appraisal Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.40 (.470)</td>
<td>3.51 (.359)</td>
<td>-.149</td>
<td>138</td>
</tr>
<tr>
<td><strong>Tangible Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.25 (.565)</td>
<td>3.38 (.464)</td>
<td>-.151</td>
<td>137</td>
</tr>
<tr>
<td><strong>Belonging Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.37 (.475)</td>
<td>3.30 (.464)</td>
<td>-.637</td>
<td>141</td>
</tr>
<tr>
<td><strong>Self-Esteem Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.17 (.384)</td>
<td>3.22 (.351)</td>
<td>-1.47</td>
<td>139</td>
</tr>
</tbody>
</table>

+p < .10, *p < .05, **p < .01
Table 5

**Perceived Social Support Means by Committed Relationship**

<table>
<thead>
<tr>
<th></th>
<th>Relationship Status</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single/Married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Committed Relationship</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraisal Social Support</td>
<td>3.43 (.449)</td>
<td>3.50 (.367)</td>
<td>-1.06</td>
<td>138</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangible Social Support</td>
<td>3.38 (.481)</td>
<td>3.32 (.459)</td>
<td>.074</td>
<td>137</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belonging Social Support</td>
<td>3.25 (.547)</td>
<td>3.30 (.464)</td>
<td>-.859</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem Social Support</td>
<td>3.16 (.382)</td>
<td>3.30 (.335)</td>
<td>-2.31</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+p < .10, *p < .05, **p < .01

Table 6

**Perceived Social Support Means by Cohabitating Status**

<table>
<thead>
<tr>
<th></th>
<th>Reside with Partner</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraisal Social Support</td>
<td>3.53 (.310)</td>
<td>3.47 (.428)</td>
<td>.724</td>
<td>46.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangible Social Support</td>
<td>3.41 (.417)</td>
<td>3.35 (.537)</td>
<td>.527</td>
<td>73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belonging Social Support</td>
<td>3.27 (.417)</td>
<td>3.36 (.537)</td>
<td>-.876</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem Social Support</td>
<td>3.23 (.341)</td>
<td>3.31 (.366)</td>
<td>-1.03</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+p < .10, *p < .05, **p < .01
Table 7

Perceived Social Support Means by Distances from Partner

<table>
<thead>
<tr>
<th>Distance of Partner Residence</th>
<th>One Hour or Less</th>
<th>More than One Hour</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal Social Support</td>
<td>3.46 ( .419)</td>
<td>3.49 ( .479)</td>
<td>-1.43</td>
<td>27</td>
</tr>
<tr>
<td>Tangible Social Support</td>
<td>3.39 ( .484)</td>
<td>3.25 ( .685)</td>
<td>.601</td>
<td>27</td>
</tr>
<tr>
<td>Belonging Social Support</td>
<td>3.40 ( .454)</td>
<td>3.25 ( .709)</td>
<td>.574</td>
<td>9.28</td>
</tr>
<tr>
<td>Self-Esteem Social Support</td>
<td>3.32 ( .354)</td>
<td>3.31 ( .423)</td>
<td>.077</td>
<td>27</td>
</tr>
</tbody>
</table>

+p < .10, *p < .05, **p < .01

Table 8

Perceived Social Support Means by States of Financial Independence Status

<table>
<thead>
<tr>
<th>Financial Independence</th>
<th>Supports Self</th>
<th>Support from Others</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal Social Support</td>
<td>3.46 ( .396)</td>
<td>3.45 ( .435)</td>
<td>.131</td>
<td>138</td>
</tr>
<tr>
<td>Tangible Social Support</td>
<td>3.37 ( .460)</td>
<td>3.38 ( .481)</td>
<td>-.123</td>
<td>137</td>
</tr>
<tr>
<td>Belonging Social Support</td>
<td>3.29 ( .527)</td>
<td>3.27 ( .504)</td>
<td>.196</td>
<td>141</td>
</tr>
<tr>
<td>Self-Esteem Social Support</td>
<td>3.23 ( .346)</td>
<td>3.21 ( .388)</td>
<td>.172</td>
<td>139</td>
</tr>
</tbody>
</table>

+p < .10, *p < .05, **p < .01

Multivariate regression analyses for perceived appraisal social support in relation to the frequency of status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of status posts predicted one's level of perceived appraisal social support. The linear combination of predictor variables were
significantly related to the perception of appraisal social support in the sample and explained a portion of the variance in the perception of appraisal social support, $R^2 = .151$, $F(3, 124) = 7.36$, $p < .000$. From this equation it was determined that lower levels of perceived stress ($\beta = .149$, $p < .002$) and the number of close friends living within an hour’s drive ($\beta = .012$, $p = .007$) had a significant impact on the perception of appraisal social support. It was found that increases in the number of friends one had within an hour’s drive would predict increases in one’s perception of appraisal social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived tangible social support. The variable of interest, frequency of status posts on Facebook, while it approached significance ($p = .094$), did not contribute significantly to the model.

<table>
<thead>
<tr>
<th>Table 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression Model of Frequency of Status Posts on the Perception of Appraisal Social Support</td>
</tr>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Stress</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
</tr>
<tr>
<td>Frequency of Facebook Status Posts</td>
</tr>
</tbody>
</table>

Notes $R^2 = .151$ ($p < .001$), $+p < .10$, $*p < .05$, $**p < .01$

**Multivariate regression analyses for perceived belonging social support in relation to the frequency of status posts on Facebook.** A multiple regression analysis was conducted to evaluate how well the frequency of status posts predicted one’s level of perceived belonging social support. The linear combination of predictor variables were significantly related to the perception of belonging social support in the sample and explained a portion of the variance in the perception of belonging social support, $R^2 = .278$, $F(4, 110) = 10.568$, $p < .000$. From this equation it was determined that lower levels of perceived stress ($\beta = .239$, $p < .000$), the number of connections one has on Facebook ($\beta = .000$, $p = .005$), and the number of close friends that live within an hour’s drive ($\beta =
.018, p = .002) had a significant impact on the perception of belonging social support. It was found that increases in the number of connections one had on Facebook and the number of friends one had within an hour’s drive would predict increases in one’s perception of belonging social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived tangible social support. However, the variable of interest, the frequency of status posts on Facebook, while approaching significance (p = .091), did not contribute significantly to the model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized β</th>
<th>Standardized Error</th>
<th>Standardized β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.239**</td>
<td>.060</td>
<td>.332</td>
</tr>
<tr>
<td>Facebook Connections</td>
<td>.000**</td>
<td>.000</td>
<td>.247</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.018**</td>
<td>.005</td>
<td>.274</td>
</tr>
<tr>
<td>Frequency of Status Posts on Facebook</td>
<td>-.049+</td>
<td>.029</td>
<td>-.141</td>
</tr>
</tbody>
</table>

Notes R² = .278 (p < .001), *p < .10, *p < .05, **p < .01

**Multivariate regression analyses for perceived tangible social support in relation to the frequency of status posts on Facebook.** A multiple regression analysis was conducted to evaluate how well the frequency of status posts predicted one’s level of perceived tangible social support. The linear combination of predictor variables were significantly related to the perception of tangible social support in the sample and explained a portion of the variance in the perception of tangible social support, R² = .227, F(5,116) = 6.811, p < .000. From this equation it was determined that lower levels of perceived stress (β = .175, p = .002), the number of close friends one has within an hour’s drive (β = .016, p = .003), and the frequency of posting statuses on Facebook (β = -.060, p = .022) had a significant impact on the perception of tangible social support. It was found that increases in the number of friends one within an hour’s drive would predict increases in one’s level of perceived social support. In addition, lower levels of perceived
stress predicted increases in one’s level perceived tangible social support. However, higher levels of frequency status posts predict lower levels of one’s perceived tangible social support.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized β</th>
<th>Standardized Error</th>
<th>Standardized β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.175**</td>
<td>.054</td>
<td>.266</td>
</tr>
<tr>
<td>Family Member Facebook Connections</td>
<td>.001</td>
<td>.001</td>
<td>.096</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.016**</td>
<td>.005</td>
<td>.271</td>
</tr>
<tr>
<td>Family Members in an Hour’s Drive</td>
<td>.004</td>
<td>.006</td>
<td>.062</td>
</tr>
<tr>
<td>Frequency of Status Posts on Facebook</td>
<td>-.060*</td>
<td>.026</td>
<td>-.190</td>
</tr>
</tbody>
</table>

Notes $R^2 = .227$ ($p < .001$), *p < .10, *p < .05, **p < .01

Multivariate regression analyses for perceived self-esteem social support in relation to the frequency of status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of status posts predicted one’s level of perceived self-esteem social support. The linear combination of predictor variables were significantly related to the perception of self-esteem social support in the sample and explained a portion of the variance in the perception of belonging social support, $R^2 = .173$, $F(5,121) = 5.077$, $p < .000$. From this equation it was determined that lower levels of perceived stress ($\beta = .170$, $p < .000$), correlated significantly with the perception of self-esteem social support. Lower levels of perceived stress predicted increases in one’s level perceived self-esteem social support. However, the variable of interest, the frequency of status posts on Facebook, did not contribute significantly to the model.
Table 12
Regression Model of Frequency of Status Posts on the Perception of Self-Esteem Social Support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized β</th>
<th>Standardized Error</th>
<th>Standardized β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.170**</td>
<td>.043</td>
<td>.325</td>
</tr>
<tr>
<td>Facebook Close Friend Connections</td>
<td>.001</td>
<td>.001</td>
<td>.105</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.003</td>
<td>.005</td>
<td>.063</td>
</tr>
<tr>
<td>Family Members in an Hour’s Drive</td>
<td>.008</td>
<td>.005</td>
<td>.151</td>
</tr>
<tr>
<td>Frequency of Status Posts on Facebook</td>
<td>.011</td>
<td>.021</td>
<td>.043</td>
</tr>
</tbody>
</table>

Notes $R^2 = .173$ ($p < .001$), *$p < .05$, **$p < .01$

Multivariate regression analyses for perceived appraisal social support in relation to the frequency of others responding to one’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of others responding to one’s status posts on Facebook predicted one’s level of perceived appraisal social support. The linear combination of predictor variables was significantly related to the perception of appraisal social support in the sample and explained a portion of the variance in the perception of appraisal social support, $R^2 = .133$, $F(3,122) = 6.259$, $p = .001$. From this equation it was determined that lower levels of perceived stress ($\beta = .148$, $p = .003$) and the number of close friends that live within an hour’s drive ($\beta = .011$, $p = .008$) had a significant impact on the perception of appraisal social support. It was found that increases in the number of friends one had within an hour’s drive would predict increases in one’s perception of appraisal social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived appraisal social support. However, the variable of interest, the frequency of others responding to one’s status posts on Facebook, did not contribute significantly to the model.
Multivariate regression analyses for perceived belonging social support in relation to the frequency of others responding to one’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of others responding to one’s status posts predicted one’s level of perceived belonging social support. The linear combination of predictor variables were significantly related to the perception of belonging social support in the sample and explained a portion of the variance in the perception of belonging social support, $R^2 = .266$, $F(4,108) = 9.776$, $p<.000$. From this equation it was determined that lower levels of perceived stress ($\beta = .232$, $p < .000$), the number of connections one has on Facebook ($\beta = .000$, $p = .008$), and the number of close friends that live within an hour’s drive ($\beta = .018$, $p = .002$) had a significant impact on the perception of belonging social support. It was found that increases in the number of connections one had on Facebook and the number of friends one had within an hour’s drive predicted increases in one’s perception of belonging social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived tangible social support. However, the variable of interest, the frequency of others responding to one’s status posts on Facebook, did not contribute significantly to the model.
Table 14
Regression Model of Frequency of Other’s Response to One’s Status Posts on the Perception of Belonging Support

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized β</th>
<th>Standardized Error</th>
<th>Standardized β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.233**</td>
<td>.061</td>
<td>.324</td>
</tr>
<tr>
<td>Facebook Connections</td>
<td>.000**</td>
<td>.000</td>
<td>.243</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.018**</td>
<td>.006</td>
<td>.277</td>
</tr>
<tr>
<td>Frequency of Other’s Responses to Your Status Posts</td>
<td>-.026</td>
<td>.023</td>
<td>-.096</td>
</tr>
</tbody>
</table>

Notes $R^2 = .266$ ($p < .001$), +p < .10, *p < .05, **p < .01

Multivariate regression analyses for perceived tangible social support in relation to the frequency of others responding to one’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of others responding to predicted one’s status posts one’s level of perceived tangible social support. The linear combination of predictor variables were significantly related to the perception of tangible social support in the sample and explained a portion of the variance in the perception of tangible social support, $R^2 = .208$, $F(5, 114) = 5.998$, $p < .000$. From this equation it was determined that lower levels of perceived stress ($\beta = .167$, $p = .003$) and the number of close friends one has within an hour’s drive ($\beta = .016$, $p = .004$) had a significant impact on the perception of tangible social support. It was found that increases in the number of friends one had and the frequency of status postings of Facebook would predict increases in one’s level of perceived tangible social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived tangible social support. The variable of interest, the frequency of others responding to one’s status posts on Facebook, was not statistically significant to the model.
Multivariate regression analyses for perceived self-esteem social support in relation to the frequency of others responding to one’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of others responding to one’s status posts predicted one’s level of perceived self-esteem social support. The linear combination of predictor variables were significantly related to the perception of self-esteem social support in the sample and explained a portion of the variance in the perception of self-esteem social support, $R^2 = .173$, $F(5,119) = 4.992$, $p < .000$. From this equation it was determined that lower levels of perceived stress ($\beta = .173$, $p < .000$), had a significant impact on the perception of self-esteem social support. Lower levels of perceived stress predicted increases in one’s level perceived self-esteem social support. However, the variable of interest, the frequency of others responding to one’s status posts on Facebook, did not contribute significantly to the model.
Multivariate regression analyses for perceived appraisal social support in relation to the frequency of responding to other’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of responding to other’s status posts predicted one’s level of perceived appraisal social support. The linear combination of predictor variables were significantly related to the perception of appraisal social support in the sample and explained a portion of the variance in the perception of appraisal social support, $R^2 = .137$, $F(3,123) = 6.522$, $p < .000$. From this equation it was determined that lower levels of perceived stress ($\beta = .144$, $p = .003$) and the number of close friends that live within an hour’s drive ($\beta = .011$, $p = .008$) had a significant impact on the perception of appraisal social support. It was found that increases in the number of friends one had within an hour’s drive would predict increases in one’s perception of appraisal social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived appraisal social support. However, the variable of interest, the frequency of others responding to one’s status posts on Facebook, did not contribute significantly to the model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized $\beta$</th>
<th>Standardized Error</th>
<th>Standardized $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.144**</td>
<td>.048</td>
<td>.255</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.011*</td>
<td>.004</td>
<td>.227</td>
</tr>
<tr>
<td>Frequency of One’s Responses to Other’s Facebook Posts</td>
<td>-.025</td>
<td>.024</td>
<td>-.086</td>
</tr>
</tbody>
</table>

Notes $R^2 = .137$ ($p < .001$), *$p < .10$, **$p < .05$, ***$p < .01$

Multivariate regression analyses for perceived belonging social support in relation to the frequency of responding to other’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of
responding to other’s status posts predicted one’s level of perceived belonging social support. The linear combination of predictor variables were significantly related to the perception of belonging social support in the sample and explained a portion of the variance in the perception of belonging social support $R^2 = .275$, $F(5,108) = 8.213$, $p<.000$. From this equation it was determined that lower levels of perceived stress ($\beta = .224$, $p < .000$), the number of connections one has on Facebook ($\beta = .000$, $p = .007$), and the number of close friends that live within an hour’s drive ($\beta = .016$, $p = .019$) had a significant impact on the perception of belonging social support. It was found that increases in the number of connections one had on Facebook and the number of friends one had within an hour’s drive would predict increases in one’s perception of belonging social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived belonging social support. The variable of interest, the frequency of one responding to other’s status posts on Facebook, did not contribute significantly to the model.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized $\beta$</th>
<th>Standardized Error</th>
<th>Standardized $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.224**</td>
<td>.060</td>
<td>.312</td>
</tr>
<tr>
<td>Facebook Connections</td>
<td>.000**</td>
<td>.000</td>
<td>.243</td>
</tr>
<tr>
<td>Facebook Close Friends Connections</td>
<td>.001</td>
<td>.002</td>
<td>.046</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.016*</td>
<td>.007</td>
<td>.252</td>
</tr>
<tr>
<td>Frequency of One’s Responses to Other’s Facebook Posts</td>
<td>-.050</td>
<td>.032</td>
<td>-.133</td>
</tr>
</tbody>
</table>

Notes $R^2 = .275\ (p < .001), \ +p < .10, \ *p < .05, \ **p < .01$

**Multivariate regression analyses for perceived tangible social support in relation to the frequency of responding to other’s status posts on Facebook.** A multiple regression analysis was conducted to evaluate how well the frequency of
responding to other’s status posts predicted one’s level of perceived tangible social support. The linear combination of predictor variables were significantly related to the perception of tangible social support in the sample and explained a portion of the variance in the perception of tangible social support $R^2 = .236$, $F(4,116) = 8.176$, $p < .001$. From this equation it was determined that lower levels of perceived stress ($\beta = .167$, $p = .004$), the number of close friends one has within an hour’s drive ($\beta = .017$, $p = .001$), and the frequency of one responding to other’s status posts on Facebook ($\beta = -.083$, $p = .000$) had a significant impact on the perception of tangible social support. It was found that increases in the number of friends one would predict increases one’s level of perceived social support. In addition, lower levels of perceived stress predicted increases in one’s level perceived tangible social support. Increases in the frequency of responses to other’s status posts predicted a decrease in perception of tangible social support.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized $\beta$</th>
<th>Standardized Error</th>
<th>Standardized $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>.167**</td>
<td>.053</td>
<td>.237</td>
</tr>
<tr>
<td>Facebook Connections</td>
<td>.000</td>
<td>.000</td>
<td>.030</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.018**</td>
<td>.005</td>
<td>.295</td>
</tr>
<tr>
<td>Frequency of One’s Responses to Other’s Facebook Posts</td>
<td>-.083**</td>
<td>.030</td>
<td>-.242</td>
</tr>
</tbody>
</table>

Notes $R^2 = .236$ ($p < .001$), +$p < .10$, *$p < .05$, **$p < .01$

Multivariate regression analyses for perceived self-esteem social support in relation to the frequency of responding to other’s status posts on Facebook. A multiple regression analysis was conducted to evaluate how well the frequency of one responding to other’s status posts predicted one’s level of perceived self-esteem social support. The linear combination of predictor variables were significantly related to the perception of self-esteem social support in the sample and explained a portion of the
variance in the perception of self-esteem social support $R^2 = .174$, $F(5,119) = 5.043$, $p<.000$. From this equation it was determined that lower levels of perceived stress ($\beta = .170$, $p < .000$), had a significant impact on the perception of self-esteem social support. Lower levels of perceived stress predicted increases in one’s level perceived self-esteem social support. However, the variable of interest, the frequency of one responding to other’s status posts on Facebook, did not contribute significantly to the model.

<table>
<thead>
<tr>
<th>Table 20</th>
<th>Regression Model of Frequency of One’s Response to Other’s Status Posts on the Perception of Self-Esteem Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Unstandardized $\beta$</td>
</tr>
<tr>
<td>Stress</td>
<td>.170**</td>
</tr>
<tr>
<td>Facebook Close Friend Connections</td>
<td>.001</td>
</tr>
<tr>
<td>Close Friends in an Hour’s Drive</td>
<td>.003</td>
</tr>
<tr>
<td>Family Members in an Hour’s Drive</td>
<td>.008</td>
</tr>
<tr>
<td>Frequency of Your Responses to Other’s Facebook Posts</td>
<td>-.010</td>
</tr>
</tbody>
</table>

Notes $R^2 = .174$ ($p < .001$), +$p < .10$, *$p < .05$, **$p < .01$

Using the Data to Answer the Research Questions

Using the regression models created for analysis the research questions will be answered. Significant findings occur in two research questions in regards to the relationship of perceived social support and types of communication on Facebook.

**Research Question #1.** Considering each type of social support (**self-esteem, appraisal, tangible, and belonging**), Is there a significant relationship between the frequency of posting Facebook statuses and the amount of social support an individual perceives?

**Self-Esteem Social Support and Frequency of Status Posts on Facebook.** There is no evidence to show a significant relationship between the perception of self-esteem social support and the frequency of posting statuses on Facebook.
Appraisal Social Support and Frequency of Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of appraisal social support and the frequency of posting statuses on Facebook.

Tangible Social Support and Frequency of Status Posts on Facebook. There is evidence to suggest a significant predictive relationship between the perception of tangible social support and the frequency of status posts on Facebook. As one’s perception of their level of tangible social support increases they are more likely to have a reduced frequency of status posts on Facebook.

Belonging Social Support and Frequency of Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of belonging social support and the frequency of posting statuses on Facebook.

Research Question #2. Considering each type of social support (self-esteem, appraisal, tangible, and belonging), is there a significant relationship between the frequency of others responding to an individual's Facebook status and the amount of social support an individual perceives?

Self-Esteem Social Support and Frequency of Others Responding to One’s Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of self-esteem social support and the frequency of others responding to one’s status posts on Facebook.

Appraisal Social Support and Frequency of Others Responding to One’s Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of appraisal social support and the frequency of others responding to one’s status posts on Facebook.
Tangible Social Support and Frequency of Others Responding to One’s Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of tangible social support and the frequency of others responding to one’s status posts on Facebook.

Belonging Social Support and Frequency of Other’s Responding to One’s Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of belonging social support and the frequency of others responding to one’s status posts on Facebook.

Research Question #3. Considering each type of social support (self-esteem, appraisal, tangible, and belonging), is there a significant relationship between the frequency of responding to other's Facebook status and the amount of social support an individual perceives?

Self-Esteem Social Support and Frequency of Responding to Other’s Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of self-esteem social support and the frequency of responding to other’s status posts on Facebook.

Appraisal Social Support and Frequency of Responding to Other’s Status Posts on Facebook. There is no evidence to show a significant relationship between the perception of appraisal social support and the frequency of responding to other’s status posts on Facebook.

Tangible Social Support and Frequency of Responding to Other’s Status Posts on Facebook. There is evidence to suggest a significant predictive relationship between the perception of tangible social support and the frequency of responding to other’s status posts on Facebook.
posts on Facebook. As one’s perception of their level of tangible social support increases they are more likely to have a reduced frequency of responding to other’s status posts on Facebook.

**Belonging Social Support and Frequency of Responding to Other’s Status Posts on Facebook.** There is no evidence to show a significant relationship between the perception of belonging social support and the frequency of responding to other’s status posts on Facebook.
Chapter Five: Discussion

Summary of Results

This dissertation explored whether or not the frequency of three types of public communication (creating status posts, responding to others’ status posts, and others responding ones status posts) on the social networking website Facebook significantly predicted the perception of four types of social support (appraisal, belonging, self-esteem, and tangible) while controlling for perceived stress, close friends within an hour’s drive, the number of family members within an hour’s drive, the total number of connections one has on Facebook, and the number of family connections one has on Facebook. The frequency of two types of public communication on Facebook, creating status posts and responding to others status posts, were found to have a significant negative relationship to the perception of tangible social support. The frequency of public communication on Facebook, in any of the forms studied in this dissertation, was not found to be significantly related to the perception of appraisal, belonging, or self-esteem social support, nor were others’ responses to one’s status posts found to be related to the perception of tangible social support.

Using a communicative approach to social support to understand the findings. This portion of the dissertation discusses possible reasons for the limited number of significant relationships found, using the communicative approach to social support outlined by Burleson et al. (1994) and discussed in the literature review.
**Interactions as a component of the communication of social support.** Burleson et al. (1994) identifies interactions as one of three components of social support, with the content and relationships being the remaining components. This dissertation explored one aspect of interactions on social network websites, frequency of public communication, in regards to the perception of different types of social support. Frequency of two types of communication on Facebook, *posting statuses* and *responding to other’s statuses*, did show significant negative relationships with the perception of one type of social support, tangible, but not with the other three types of social support. Other aspects of interactions, not explored by this dissertation, such as timing of responses and available means of image-based or private communication, may be more important to the perception of social support related to communication on social networking websites. It is also possible that frequency of communication may only be significant when one considers other aspects of the interactions, such as timing, other communication available on the same website such as direct messaging etc, and consideration as to whether the communication is public or private. These questions however were not asked.

Baron (2004) notes that timing, or the use of delays and quick responses, plays a role in conveying meaning in computer mediated communication. Two forms of communication studied in this dissertation, *one’s response to other’s Facebook status posts* and *other’s response to one’s Facebook status posts*, are explicitly interactive. This dissertation did not pose questions to whether the timing of responses was a factor of the strength of perceived social support as it relates to frequency of communication on Facebook.
Social networking websites are not limited to text based communication. Facebook allows the users to communicate via email, instant messaging, images, videos, and even interaction through games played using the website as a platform. The basis of Social Information Processing Theory (SIPT) is that users of computer mediated communication will adapt to the limits of the method of communication in order to convey meaning and build relationships (Walther, 1992). This would strongly suggest that users of Facebook would not limit themselves to text based messages when they evaluate their interactions on the website. This was suggested by Wright (2012a) who found that the perception of social support was associated with how attractive the individuals one communicated with were, indicating that video or profile pictures could influence the perception of social support.

This dissertation focused specifically on public communication on Facebook. However, communication on Facebook is not limited to public communication. As with focusing specifically on text based communication, SIPT suggests that users of computer mediated communication will not limit themselves to this boundary when evaluating the communication they have using this website. This was suggested by Vitak and Ellison (2012) who found that individuals considered who could view their communication when evaluating the level social support they could obtain by communicating on Facebook.

*Content as a component of the communication of social support.* Burleson et al. (1994) identifies content as one of three components of social support. The ability of communicators to adjust the content of computer mediated communication to their needs to be a key component of SIPT (Walther, 1992). Individuals will consider how to meet their needs with the restrictions of the communication environment and the purpose of
their communication (Walther, 1994). This dissertation did not measure the content of communication. It is possible that the content of the communication of the participants of this study was such that, in most cases, it would not lead to a greater or lesser perception of social support, regardless of its frequency.

**Relationships as a component of the communication of social support.** Burleson et al. (1994) identifies relationships as another of the three components of social support. The type of relationship one has with others has been demonstrated to have a significant impact on the perception, if not the effectiveness, of different types of social support (Metts, Geist, & Gray, 1994). This dissertation did measure the number of close friends and family that individuals were connected with on Facebook, however it did not seek to identify the relationship between the participants and those they communicated with on Facebook. It is possible that frequency of communication of Facebook with individuals of different relationships would predictive of more or less social support.

**Why is the perception of tangible social support unique?** Based on the review of the literature, it was surprising to this researcher that tangible social support would be the only type of social support to have a significant but negative relationship to the frequency of public communication on Facebook. Previous studies have suggested that the perception of self-esteem (Ballantine & Stephenson, 2011; Liang et al., 2011; Vitak & Ellison, 2012; Wright, 2012a; Wright, 2012b, Wright et al., 2013), appraisal (Ballantine & Stephenson, 2011; Liang et al., 2011) or belonging social support (Baker & Moore, 2008) are related to use of social networking websites. Based on the moderate to high levels of correlations (see Table 1) between the types of social support, it was expected
that one or more of the possible explored relationships would be significant. This expectation was not substantiated by the results of the analysis.

A possibility for the significant association between two types of communication and the strength of perceived tangible support, but insignificant findings with the other three forms of support was that the number or percentage of connections or friends that one had on Facebook that one did not identify as a close friend or family member could be associated with one’s perceived tangible support. This was considered due to Granovetter’s (1973) work indicating that the greater the exposure one has to individuals that are not like oneself, the more diverse resources one is likely to have access to through those connections. A pair of variables were created to test this possibility.

To create the first variable, the number of non-close friends and family members an individual had was created by subtracting the number of close friends and the number of family from the number of connections one had on Facebook. The remaining number was presumed to be the number of individuals one was connected to on Facebook that could be considered weak ties, or those who were least like oneself, according to Granovetter’s (1973) work. Considering close friends and family members to be strong ties, or those most like one’s self, is an established method of identifying strong relationships in research (Barrera, 1986). This variable was then referred to as the number Facebook associates.

A second variable was created by dividing the number of Facebook associates one had by the total number of connections one had on Facebook. This variable measured the percentage of one’s connections on Facebook that are associates.
Tests of regression were then used to explore the possibility that significant relationships between the perception of the four different types of social support (appraisal, belonging, tangible, and self-esteem) were related to the number of Facebook associates one has (see table 21). The number of Facebook associates was not a significant predictor of the strength of perceived appraisal, tangible, and self-esteem social support but was a significant predictor of the strength of perceived belonging social support ($\beta = .042, p = .026$). While of potential interest, the strength of perceived tangible social support was not uniquely predicted by the number of Facebook associates one had. This result suggests that the number of Facebook associates one has does not differentiate it from the other types of perceived social support in having a significant relationship to the frequency of communication on Facebook. Thus the possibility for the first variable, number of associates, did not illuminate the reason for the significant tangible support finding.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized $\beta$</th>
<th>Standardized Error</th>
<th>Standardized $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal</td>
<td>.000</td>
<td>.000</td>
<td>.062</td>
</tr>
<tr>
<td>Belonging</td>
<td>.000*</td>
<td>.000</td>
<td>.026</td>
</tr>
<tr>
<td>Tangible</td>
<td>.000</td>
<td>.000</td>
<td>-.031</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>.000</td>
<td>.000</td>
<td>.043</td>
</tr>
</tbody>
</table>

Tests of regression were also used to explore the possibility of significant relationships between the perception of the four different types of social support (appraisal, belonging, tangible, and self-esteem) and the percentage of one’s connections on Facebook that were associates. Unlike the number of associates on Facebook one has,
the percentage of one’s connections on Facebook that were associates did uniquely predict the strength of perception of tangible social support one had (β = -.010, p = .002) (see table 22). As the percentage of Facebook connections that were associates increased, the strength of ones perceived tangible social support decreased.

<table>
<thead>
<tr>
<th>Table 22</th>
<th>Regressions of Percentages of Facebook Associates on the Types of Social Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td><strong>Unstandardized β</strong></td>
</tr>
<tr>
<td><strong>Appraisal</strong></td>
<td>-.005</td>
</tr>
<tr>
<td>Notes</td>
<td>$R^2 = .027$ ($p &lt; .001$), * $p &lt; .10$, ** $p &lt; .01$</td>
</tr>
<tr>
<td><strong>Belonging</strong></td>
<td>-.003</td>
</tr>
<tr>
<td>Notes</td>
<td>$R^2 = .005$ ($p &lt; .001$), * $p &lt; .10$, ** $p &lt; .01$</td>
</tr>
<tr>
<td><strong>Tangible</strong></td>
<td>-.010**</td>
</tr>
<tr>
<td>Notes</td>
<td>$R^2 = .082$ ($p &lt; .001$), * $p &lt; .10$, ** $p &lt; .01$</td>
</tr>
<tr>
<td><strong>Self-Esteem</strong></td>
<td>.000</td>
</tr>
<tr>
<td>Notes</td>
<td>$R^2 = .001$ ($p &lt; .001$), * $p &lt; .10$, ** $p &lt; .01$</td>
</tr>
</tbody>
</table>

The second series of tests of regressions offers a possible explanation as to why the perception of tangible social support was uniquely and significantly associated with frequency of communication on Facebook. Social network websites, such as Facebook, allow individuals to connect to individuals that they may not know otherwise. This may lead to an environment in which the overwhelming majority of individuals one is connected to are not well connected to the user. In this sample the mean percentage of Facebook connections that would not qualify as close friends or family members was 86.6%. In a few cases 99 percent of connections were not close friends or family members.

**Active participation in communication as the only significant predictors.** A point of interest that emerged from the significant findings was that only the frequency of the forms of communication that the participant was the active agent in, posting Facebook statuses and responding to other’s Facebook statuses, were predictive of the
strength of perceived tangible social support. This finding was not expected as SIPT stresses the importance of the construction of communication and the interpretation of communication in defining the relationship between the communicators (Walther, 1992). What limited research that has been done on the connections between being an active agent and social support has shown a positive association between the two concepts (Askland, 2014; Nam & Chun, 2014), however this dissertation found a significant negative association between being an active agent and tangible social support. It is unclear as to why the direction of the relationship in this dissertation was different from the findings of previous research. The reasons may be ones discussed previously, such as the saturation of one’s connections in the social networking website with individuals one does not identify as close friends or family members.

**Negative relationship of the frequency of public communication on Facebook and the perception of tangible social support.** Previous research found that the perception of the strength of social support as it relates to social network use was significant and positive (Baker & Moore, 2008; Ballantine & Stephenson, 2011; Liang et al., 2011; Vitak & Ellison, 2012; Wright, 2012a; Wright, 2012b, Wright et al, 2013) or non-significant (Cavallo et al., 2012, Manago, Taylor, & Greenfield., 2012). The finding of significant negative relationships between the perception of the strength of tangible social support and the frequency of two types of public communication on Facebook were unique in light of the previous research. However, the previous research focused on the perception of other (appraisal, belonging, and self-esteem) types of social support and not tangible support. There may be something related to public communication on social networking websites that supports a belief that one’s tangible social support decreases
with greater frequency of use. As noted previously, this may be one of the aspects of the components of the communication of social support (interactions, relationships, and content) discussed by Burleson et al. (1994).

**Implications for Social Work.** This dissertation explored the relationship between the frequency of three types of public communication on Facebook (posting statuses, responding to other’s statuses, and other’s responding to one’s status) and perception of the strength of four types of social support (appraisal, belonging, tangible, and self-esteem). In the overwhelming majority of potential relationships explored no significant findings were discovered. Two of the potential relationships explored, the potential relationship between the frequency of Facebook status updates and the perception of the strength of tangible social support and the potential relationship between the frequency of responding to other’s Facebook status updates and the perception of the strength of tangible social support, a significant but negative relationship was discovered.

These findings suggest that, in regards to assessing the social support resources and needs of clients and in regards to the perception of appraisal, belonging and self-esteem social support, social workers should not be overly concerned with how frequently a client is publically communicating on social networking websites such as Facebook. However, social workers should be aware that the frequency of posting Facebook statuses and responding to other’s Facebook statuses is associated with the perception of tangible social support, with higher frequency of public communication associated with lower levels of perceived tangible social support.
In regards to interventions the findings of this dissertation suggest that, with the exception of the significant findings, designing interventions that increase or decrease the frequency of public communication with others on social networking websites such as Facebook will not significantly impact the perceptions of the strength of social support a client perceives. It may be worth addressing the frequency of public communication on Facebook, in which the client is the active agent of communication, if the strength of the perception of tangible social support may negatively impact the outcome of the client. However, the findings of this dissertation do not presume causality. As a result, interventions seeking to adjust the frequency of public communication on Facebook cannot be said to cause changes in the perception of tangible social support. At this stage it would be appropriate to limit interventions to being informative of the relationship rather than seeking to change the perception of tangible social support through adjustment of the frequency of public communication on social networking websites. The limitations of the study, discussed below, may make even this intervention premature.

It is important to note that this dissertation looked at one aspect, frequency, of one component, interactions, of a communicative model of social support in the context of public communication on Facebook. Other aspects of all three components have yet to be thoroughly explored in regards their relationship to strength of perceived social support in these types of environments. As a result, social workers should be cautious in presuming these results are definitive for the purposes of assessment and intervention planning. As Vitak and Ellison (2012) found, Facebook can facilitate public communication that increases or decreases the perception of different types of social support, depending on the content of the communication and the relationship between those involved in the
communication. Interactions between the content of communication, the relationships of those involved in the communication, and the interactions are likely to be complex. Until further research has been conducted, involving more generalizable samples, social workers should limit using these findings in their practice to low risk populations.

Despite the limited statistically significant findings of this dissertation, the prevalence of social network website usage by individuals in the United States and the amount of time invested in its use suggest that social work practice cannot ignore this activity when considering assessment and intervention. At the very least, some resources should be devoted to explore how the complex activity benefits and detracts from obtaining desirable outcomes in potential clients. Social work practice should, as suggested by Smith (2012), also explore the potential of using social networking websites to organize diverse teams of specialists to address specific clients and issues. The resources required to organize these specialized teams via social networking websites are likely to be much less than using more traditional methods, such as travel or telephone communication.

Limitations of the Study.

Limitations of the sample. The sample of this dissertation in one of the primary limitations of the study. The sample was a sample of convenience, and any findings are not generalizable to the general public. This was reflected in the demographics of the sample, which indicated participants were young ($m = 26.05, SD = 5.8$), mostly full-time graduate students (77.1%), who identified as Caucasian (84.1%) and female (81.9%). Thus it is unclear if gender, age, race or ethnicity, or educational level play an important role since there was little variability in the sample.
While the sample size reached the optimistic end of the expectations for this dissertation, it was not large enough to explore the subject material in as much depth as the complexity of the material suggests. One aspect of communication on social networking websites, the frequency of public communication, was explored in relationship to strength of the perception of social support. As noted previously in this chapter, other aspects of communication, content and relationships, could have added greater understanding to the research questions.

**Limitations of the methodology.** Quantitative methodology, while appropriate for this dissertation, is limited in the results that it can obtain. Questions and answers create boundaries that may not adequately describe the unique experiences of each participant in regards to the subject of interest. The quantitative methodology in this study was able to provide answers to the research questions proposed in this dissertation but was unable to provide understanding of why the answers occurred.

**Future Research in the Area.**

Future research in this area is suggested by the results of this dissertation. Studies duplicating this research could be done using samples that are more reflective of the general population or of populations that are the most impacted by the strength of perceived social support. This would allow the exploration of the relationships between the characteristics of communication on social network websites and the perception of social support. This could be potentially useful to social work practice in assessment and intervention planning.

Future studies in communication through social network websites could also be conducted on the other aspects of the interactions component of communicative model of
social support and on the aspects of the other components of social support, content, and relationships. Aspects of interactions such as timing of communication and non-textual communication could be included. The significance of the type of relationship between those communicating could be explored, independently or in conjunction with other concepts. What is being communicated, both in terms of text and other material could be explored. This would allow for a greater understanding of a potentially complex interactions involved in the strength of the perception of different types of social support as it relates to communication on social network websites.

The reasons underlying the directionality of the significant findings in this dissertation could be explored. While it is interesting, and potentially useful, to know that increased frequency of some types of public communication predicts a decrease in perceived tangible support, it is potentially much more useful, and more interesting, to know why this is occurring.

Instruments could be developed to aid in the future research in this area. While the instruments selected for this study were useful, the complexity of subject suggests that instruments with less items may be useful in exploring the subject. This change will allow a gathering of a greater depth of data while minimizing the inconvenience to future samples and reduce the attrition of the sample due to the length of the survey.

Finally, other aspects of social support, social embeddedness and actualized social support, could be incorporated to a greater degree in future research. This would allow a greater utility for social work practice in the findings of future research.
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Appendix A

Demographic Questions

Some material adapted from the United States Census Bureau (n.d.)

1. How old are you?

2. What is your current employment status?
   a. Unemployed, not seeking employment
   b. Unemployed, seeking employment
   c. Employed, working less than 40 hours a week
   d. Employed, working at least 40 hours a week

3. Which best describes your current academic status?
   a. Part-time undergraduate student
   b. Full-time undergraduate student
   c. Part-time graduate student
   d. Full-time graduate student
   e. I am not a student at this time

4. What is your race (select all that apply)?
   a. White/Caucasian
   b. African American/Black
   c. Asian
   d. Native American/Native Alaskan
   e. Pacific Islander
   f. Other

5. Are you of Hispanic or Latino origin?
   a. Yes
   b. No

6. Which gender do you most identify with?
   a. Male
   b. Female
   c. Other
   d. None

7. Which of the following best describes your current relationship status?
a. Single
b. Married
c. Not married but in a committed relationship

8. You said that you are in a married or in a committed relationship. Does your spouse/partner live with you?
   a. Yes
   b. No

9. You indicated that you do not live with your spouse/partner. Do they live within an hour's drive of you?
   a. Yes
   b. No

10. How many close friends do you have that live within an hour's drive of you?

11. How many family members do you have that live within an hour's drive of you?

12. Which best describes your current financial status?
   a. I support myself
   b. I am supported by others

13. You said you are currently financially supported by others. To the best of your ability indicate the yearly household income of your largest source of financial support.
   a. Under $15,000
   b. $15,001 to $24,999
   c. $25,000 to $34,999
   d. $35,000 to $49,999
   e. $50,000 to $74,999
   f. $75,000 to $99,999
   g. $100,000 and over

14. You said that you currently support yourself financially. To the best of your ability indicate your yearly household income.
   a. Under $15,000
   b. $15,001 to $24,999
   c. $25,000 to $34,999
   d. $35,000 to $49,999
   e. $50,000 to $74,999
   f. $75,000 to $99,999
   g. $100,000 and over
Appendix B

Rosenberg Self-Esteem Scale

Rosenberg (1965)

1. I feel that I am a person of worth, at least on an equal plane with others.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

2. I feel that I have a number of good qualities.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

3. All in all, I am inclined to feel that I am a failure.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

4. I am able to do things as well as most other people.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

5. I feel I do not have much to be proud of.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

6. I take a positive attitude toward myself.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

7. On the whole, I am satisfied with myself.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

8. I wish I could have more respect for myself.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

9. I certainly feel useless at times.
   a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree

10. At times I think I am no good at all.
    a. Strongly Agree    b. Agree    c. Disagree    d. Strongly Agree
Appendix C

Perceived Stress Scale – 4

Cohen, Kamarck, and Mermelstein (1983)

1. In the last month, how often have you felt that you were unable to control the important things in your life?
   a. Never
   b. Almost Never
   c. Sometimes
   d. Fairly Often
   e. Very Often

2. In the last month, how often have you felt confident about your ability to handle your personal problems?
   a. Never
   b. Almost Never
   c. Sometimes
   d. Fairly Often
   e. Very Often

3. In the last month, how often have you felt that things were going your way?
   a. Never
   b. Almost Never
   c. Sometimes
   d. Fairly Often
   e. Very Often

4. In the last month, how often have you felt difficulties piling up so high that you could not overcome them?
   a. Never
   b. Almost Never
   c. Sometimes
   d. Fairly Often
   e. Very Often
Appendix D

Social Networking Questions

Some material adapted from Pew Research Center (2012) and Bessiere et al. (2007)

1. Do you use social networking websites?
   a. Yes
   b. No

2. You said that you did use social networking websites. Please indicate which social networking websites you use:
   a. Facebook
      - Yes
      - No
   b. Twitter
      - Yes
      - No
   c. Linkedin
      - Yes
      - No
   d. Google+
      - Yes
      - No
   e. Pinterest
      - Yes
      - No
   f. tumblr.
      - Yes
      - No
   g. Snapchat
      - Yes
      - No
   h. Meetup
      - Yes
      - No
i. Tagged
   - Yes
   - No

j. Other Social Network not Mentioned
   - Yes
   - No

3. You said that you used Facebook. How many people are you connected to on Facebook?

4. Of the people you are connected to on Facebook, how many would you describe as family members?

5. Of the people you are connected to on Facebook, how many would you describe as close friends?

6. Which of the following best describes how often do you post a status in Facebook?
   a. A few times a day
   b. Several times a day
   c. Several times a week
   d. At least once a week
   e. Never/cannot do this
   f. Don't know

7. Which of the following best describes how often others respond to your status posts in Facebook?
   a. A few times a day
   b. Several times a day
   c. Several times a week
   d. At least once a week
   e. Never/cannot do this
   f. Don't know

8. Which of the following best describes how often you respond to other people's status posts in Facebook?
   a. A few times a day
   b. Several times a day
   c. Several times a week
   d. At least once a week
   e. Never/cannot do this
   f. Don't know
Appendix E

Interpersonal Support Evaluation List

Material adapted from Cohen, Kamarck, and Hoberman (1985) and Department of Psychology at Carnegie Mellon University (n.d.)

Appraisal

1. There is at least one person I know whose advice I really trust.
   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

2. There is really no one I can trust to give me good financial advice.
   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

3. There is really no one who can give me objective feedback about how I'm handling my problems.
   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

4. When I need a suggestion for how to deal with a personal problem I know there is someone I can turn to.
   a. Definitely True
   b. Probably True
   c. Probably False
d. Definitely False

5. There is someone I feel comfortable going to for advice about sexual problems.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

6. There is someone I can turn to for advice about handling hassles over household responsibilities.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

7. I feel there is no one with whom I can share my most private worries and fears.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

8. If a family crisis arose few of my friends would be able to give me good advice about how to handle it.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

9. There are very few people I trust to help me solve my problems.

a. Definitely True
b. Probably True
c. Probably False  
d. Definitely False

10. There is someone I could turn to for advice about changing my job or finding a new one.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

**Belonging**

11. If I decide on a Friday afternoon that I would like to go to a movie that evening, I could find someone to go with me.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

12. No one I know would throw a birthday party for me.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

13. There are several different people with whom I enjoy spending time.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

14. I don't often get invited to do things with others.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False
15. If I wanted to have lunch with someone, I could easily find someone to join me.

   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

16. Most people I know don't enjoy the same things I do.

   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

17. When I feel lonely, there are several people I could call and talk to.

   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

18. I regularly meet or talk with members of my family or friends.

   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

19. I feel that I am on the fringe in my circle of friends.

   a. Definitely True
   b. Probably True
   c. Probably False
   d. Definitely False

20. If I wanted to go out of town for the day I would have a hard time finding someone to go with me.
a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

21. If for some reason I were put in jail, there is someone I could call who could bail me out.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

22. If I had to go out of town for a few weeks, someone I know would look after my home (the plants, pets, yard, etc.)

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

23. If I were sick and needed someone to drive me to the doctor, I would have trouble finding someone.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

24. There is no one I could call if I needed to borrow a car for a few hours.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False
25. If I needed a quick emergency loan of $100, there is someone I could get it from.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

26. If I needed some help moving into a new home, I would have a hard time finding someone to help me.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

27. If I were sick, there would be almost no one I could find to help me with my daily chores.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

28. If I got stranded 10 miles outside of town, there is someone I could call to come get me.

a. Definitely True  
b. Probably True  
c. Probably False  
d. Definitely False

29. If I had to mail an important letter at the post office by 5:00 and couldn't make it, there is someone who could do it for me.

a. Definitely True  
b. Probably True  
c. Probably False
30. If I needed a ride to the airport very early in the morning, I would have a hard
time finding anyone to take me.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

Self-Esteem

31. In general, people don’t have much confidence in me.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

32. I have someone who takes pride in my accomplishments.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

33. Most of my friends are more successful at making changes in their lives than I
am.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

34. Most people I know think highly of me.

a. Definitely True
b. Probably True
35. Most of my friends are more interesting than I am.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

36. I am more satisfied with my life than most people are with theirs.

Definitely True
Probably True
Probably False
Definitely False

37. I have a hard time keeping pace with my friends.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

38. I think my friends feel that I'm not very good at helping them solve problems.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False

39. I am closer to my friends than most other people.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False
40. I am able to things as well as most other people.

a. Definitely True
b. Probably True
c. Probably False
d. Definitely False